

**ARE YOU A
£20,000
WINNER?**

Find out
on page
58

COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

AMIGA

Drastic price cuts in the US - will the UK follow?

ATARI

Those new ST Book and Pad specifications in full

PC

Amstrad scraps the 1512 and 1640 PCs **PLUS** Which PC survived a Scud attack?

MACINTOSH

The CD-I link is announced

GAMES

Where is the world's first University for programmers?

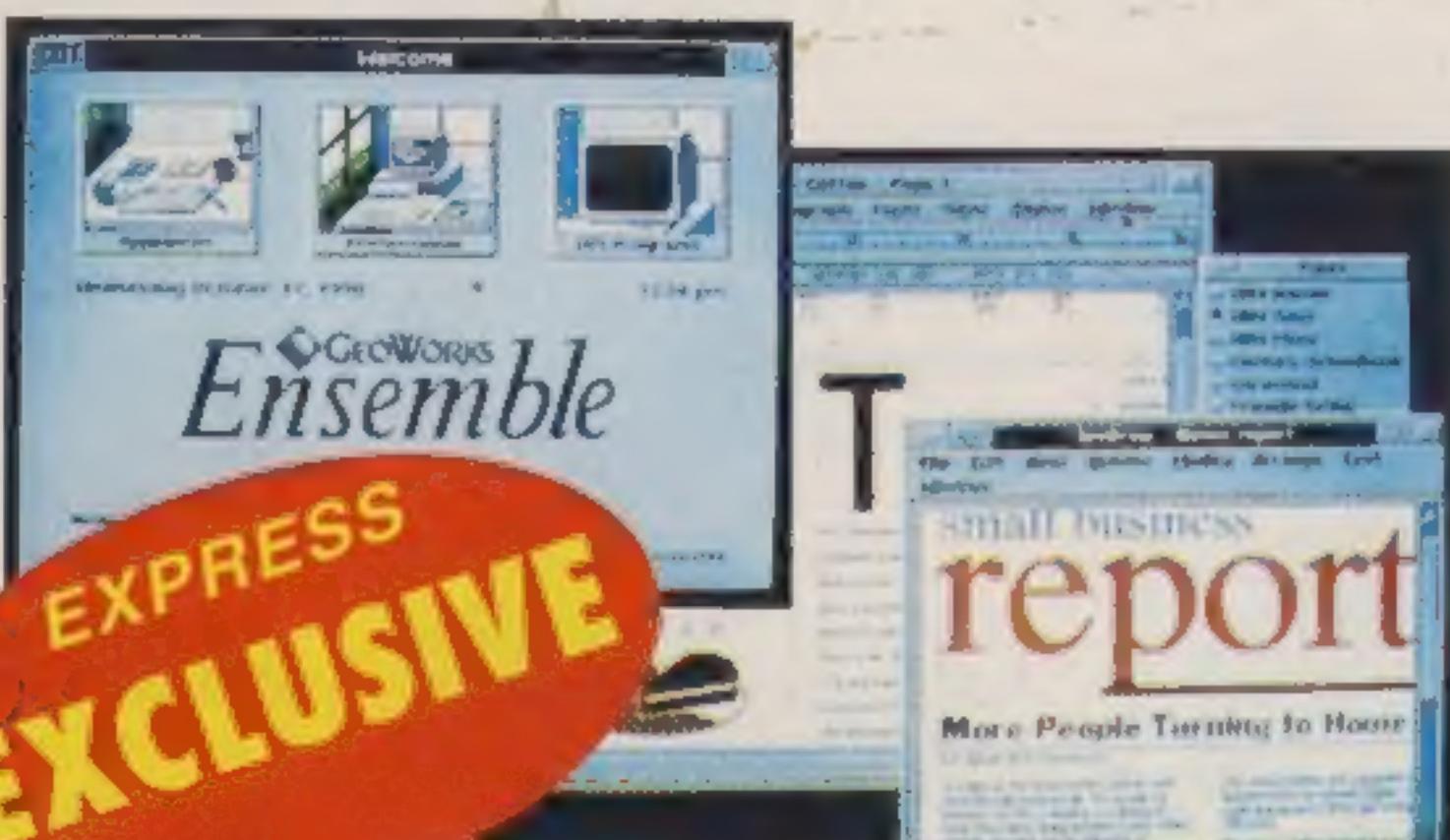
PLUS
REGULAR
COLUMNS ON
PROGRAMMING
PD SOFTWARE
TECH TIPS
ELECTRONICS
& 36 PAGES OF

**SHOPPING
EXPRESS**
BARGAINS !!!

FORGED GAMES SCANDAL

**EXPRESS
SPECIAL
REPORT**

- Professional pirates flood console market - **p5**
- How all the top cartridges are cracked - **p8**



ENSEMBLE:

Is this the new contender
for the Windows throne?

NEW PORTABLE POWER PRICING



Future
PUBLISHING

Your guarantee of value



14

9 770957 064028

frontend

edited by Colin Campbell

VIRTUALITY CRAZY



Everybody was going Virtuality crazy as the world's first Virtual Reality system for the leisure industry was launched last week. This was no standard computer game launch. Europe's media was there in force to find out what the hell all the fuss was about, and they weren't disappointed.

The Virtuality

1000SD brings a total 360 degree, three dimensional computer generated "experience" to anyone who pops his or her head into the alien-like headset.

Games on offer included a Harrier jumpjet simulation, and an Elite type space adventure. Players can see all around them, and are soon completely engrossed in the artificial world.

W Industries, the British company behind Virtuality, says the system has "undergone stringent health and safety tests" so buyers shouldn't have to worry about cracked necks. However, the state of their finances is a different matter - Virtuality costs £20,000.

- You'll be able to see what Virtuality is all about for yourself on the Horizon TV programme

Doing the Scooby Doo



YEEEEEIKS! There's a spooky ghost doing the rounds in a secluded theatre/ sports stadium/ museum, and it's scaring the living wits out of everyone it sneaks up on. Just by chance our Scoobs and his gang of "meddling kids" have rolled up, and they're going to find out what the racket's all about.

Scooby is not overly pleased with the assignment. He can expect to be locked in cupboards, left alone in dark rooms with his chicken hearted pal Shaggy, and bored to tears by the relentlessly nosy Thelma.

And, at the end of the day, the ghost just might turn out to be a scowling man with a duvet on his head who has a special reason for trying the same trick every other criminal on *Scooby Doo* has for the past ten years.

If this sounds like fun to you, then check out the new *Scooby Doo* game from Hi-Tec. It's out for £3.99 on the 8-bits and £7.99 on the 16-bits later this month. ■

• This creation could be the ugliest joystick yet devised. It comes from our friends at Cheetah, and we're told that it's "the most comfortable controller available".

Called The Bug, it will be allowed into the shops later this month for £14.95.



Giants back CD-I

Japan's leading software, publishing and consumer electronics companies have thrown their weight behind Philips' Compact Disc Interactive standard, CD-I. Representatives from 183 Japanese companies met in Tokyo late last month to discuss their

approach to CD-I. Philips, Sony and Matsushita will all be releasing CD-I players of their own within the next year, and they're all keen to make sure there's plenty of software available.

The battle between CD-I and Commodore's CDTV standard is likely to be a fierce one, with CDTV having the advantage of an earlier release date (now scheduled for early summer).

But Philips and its allies have managed to generate great interest among companies as different as Citroen and Disney.

CD-I is a simple way of accessing masses of cross-referenced information presented in an easy to digest form. It also promises movie quality games. Speech, text, graphics and video can be mixed on one CD.

Meanwhile, Apple has set up a special office in Tokyo to develop a CD-I device for the Macintosh. ■



Atari ATW school deal

In an attempt to woo buyers in the lucrative educational sector, Atari is offering its ST based Transputer Workstation to schools and colleges for half the normal price.

The top end ATW can run at 400 million instructions per second, and there are plenty of opportunities to configure the machine to a user's own requirements. The new price is £2,500.

A spokesman for Atari explained: "The ATW is already in the majority of UK universities. We just want to broaden its appeal." ■

● Soon you'll be able to conduct a full orchestra from the comfort of your PC. Professor Stan Matthews, from Stanford University in California, has developed a pair of electronic conductor batons to bring out the Bernstein's in you.

The system features a floppy disk with musical score which is connected to a synthesiser and two batons. By waving the right hand baton you can control the time of the orchestra's beat, while the left hand will lead expression and dynamics. ■



CONTENTS

REVIEWS

PICK UP A LOW COST LASER



You've probably contemplated blowing all your savings (and more) on a fantastic new laser printer. And then the reality of being broke for the next three years

comes home.

Now Mannesman Tally has launched a low-cost laser printer, which the firm is ready to sell for just £699.

Mannesman says that the

laser is being targeted at the home user who wants tip-top prints, without the price penalty.

The MT904 includes PC printing standard HP LaserJet IIIP and has one of the smallest footprints in its class (36.5cm x 40.5cm). Paper handling includes a 100-sheet feeder and manual feed as standard.

For more demanding applications, a 300-sheet bin is available that sits under the printer, saving more space.

The machine includes 14 resident fonts, and 512Kb memory as standard. MT estimates that the MT904's life is 150,000 pages at a daily workload of 125 pages per day.

For more information call 0734 788711. ■

The Pictureware library

Cheap pre-digitised graphics for the Amiga – page 10

The world's cheapest hard drive laptop

Pick up a real bargain – the Epson Equity costs only £500 – page 49

Looking for a ST hard drive?

One of the best value for money deals available – page 54

EVERY WEEK

News – pages 4-8

Games Week

Hot tips and news, plus *Brat* review – page 51



Competition

Could you be a winner? We name names – page 66

SHOPPING EXPRESS

Einstein isn't dead

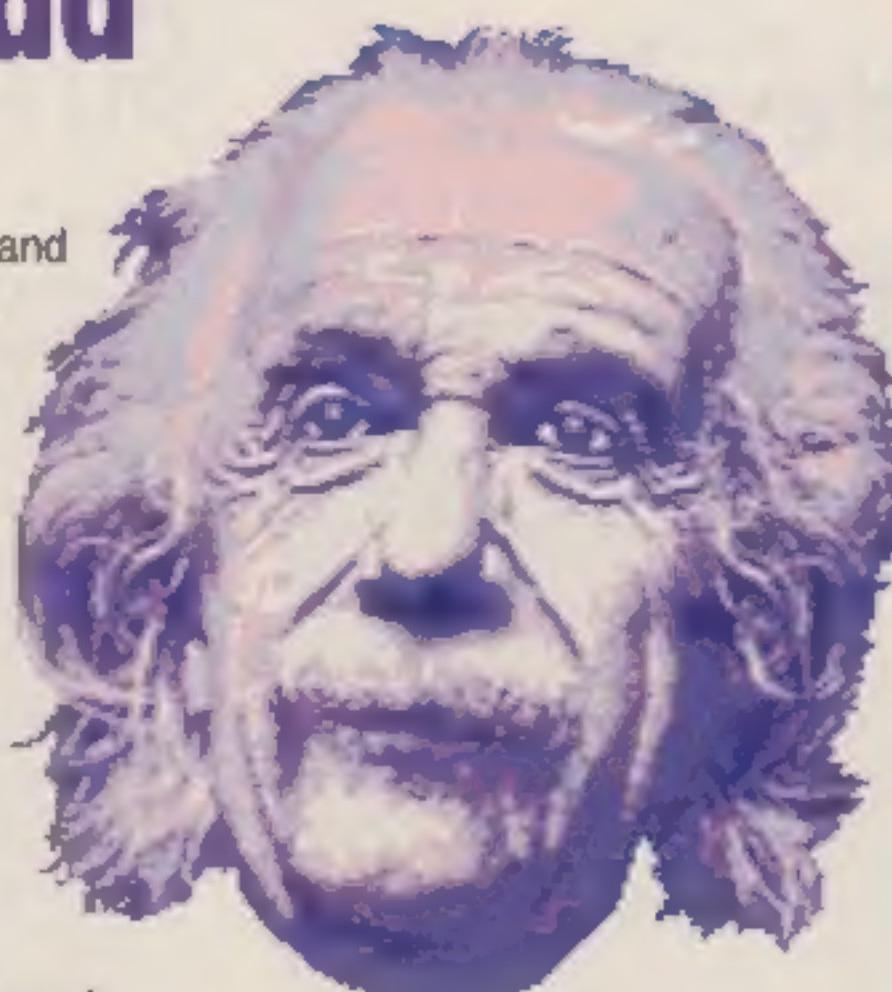
The Einstein User Group – which boasts a membership tally of 1,500 – is to hold a show next month featuring all that's best for the old machine.

The All Micro News Show at the Ratcliffe-on-Soar Sports Club on May 11 will include hardware, software and information on the Einstein, as well as plenty of goodies for other mainstream and obscure pieces of hardware.

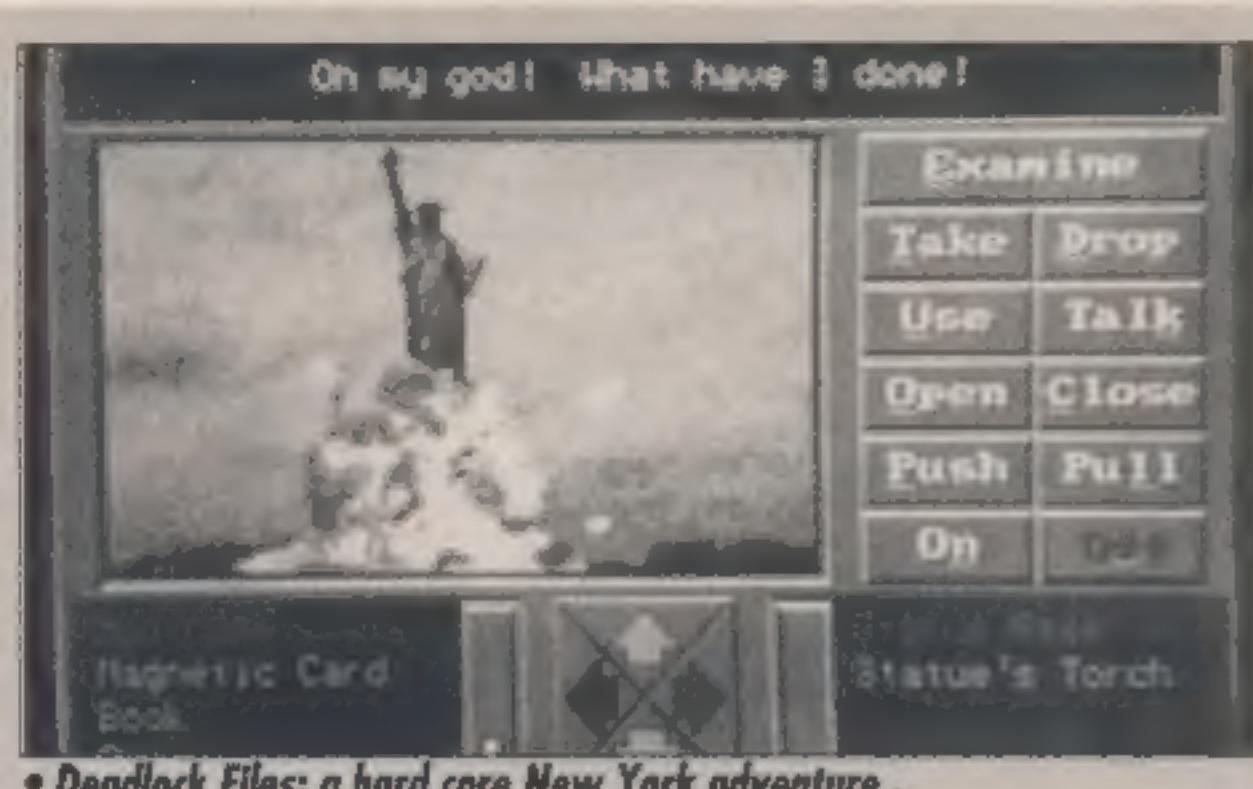
Organiser Jason Allum said: "It's a yearly event, but it's not just for Einstein users."

There'll be plenty of interest to ST, Amiga and PC owners as well as those hooked on the Coupé, Oric and others."

Entrance fee is 50 pence and the doors are open between 10.30am and 4.30pm. There's an "electronic bring and buy" sale, loads of bargains, and a licensed bar. Call the Einstein User Group on 0473 272002. ■



Letters	13	Whole Wired World	28
Mac	14	Circuit City	29
CPC	15	Tech Tips	32
Amiga	18	Centrefold	36
Archimedes	20	On-line	46
C64	24	Programming	43
Spectrum	25	PD Column	44
ST	26		



• Deadlock Files: a hard core New York adventure.

Big thriller for Big Apple

An adventure game set in modern day New York and revolving around a complex plot to overthrow the US Government is to be launched by Accolade.

Conspiracy: The Deadlock Files is grandly described by the company as "a stylish thriller in the tradition of Hitchcock and Le Carre". It's a fully digitised yarn featuring 350 images of the city in glorious 256 colour graphics.

You're an innocent blamed for

the murder of a top CIA man. His killers are, in fact, a gang of highly unpleasant financiers bent on the destruction of the American Government.

Within 24-hours you have to find seven files hidden around New York. You'll visit the Empire State and Wall Street, but with the cops, the CIA and your greedy enemies on the case, there won't be much time for sightseeing. It's out on the PC this week for £29.99. ■

Arnor swings behind CPC

After a long gap, Arnor has launched an addition to the Protext family for the Amstrad CPC.

Protype is a print enhancer for Epson compatible printers.

It includes seven complete fonts which can handle many of the characteristics of over 40 European languages. Protype will be available soon with a retail tag of £30. Call 0733 68909. ■

US cash flows for business software

Americans are spending more and more on business software, according to the Software Publishers Association (SPA).

In the last three months of 1990 more than \$1 billion was spent on PC and Mac software - up 22 per cent on the year before.

Sales of DTP software increased by an incredible 68.2 per cent, while database software was up 65.8 per

cent. MS-DOS software sales went up 18 per cent while Macintosh sales increased by 12.5 per cent.

Spurred on by the launch of Windows 3, sales of Windows-based applications were up by 198 per cent; that sector now accounts for 10 per cent of PC software sales.

Americans spent \$4.6 billion on business software - 26.2 per cent more than in 1989. ■

Will Commodore follow suit in the UK?

AMIGA: US PRICES TO BE SLASHED

Commodore UK was last week deflecting speculation that it is about to cut the prices of its top-end Amigas. This follows drastic cuts across the Amiga 2000 and 3000 ranges in the US.

The American company has slashed the Amiga 2000 by 16 per cent from \$1,895 to \$1,599, while the hard disk version is down 26 per cent from \$2,699 to \$1,999. The power station Amiga 3000 has been reduced by ten per cent to \$2,999, while the Amiga 3000-25/50 has been cut by \$500 - \$3,999 to \$3,499.

Commodore US's decision to make its power Amigas much more competitive sparked off rumours that a price cut would be made in the UK. However, Andrew Ball, Commodore UK's spokesman, declined to comment directly on the speculation.

He said: "Yes, the Americans have cut their prices. But it's up to them what they do, and it's up to us what we do. When we're ready to make any price changes we'll let you know."

Commodore has always been keen to promote its expensive Amigas as worthwhile options for the business user; the US com-



• Amiga 2000: price drop in the US.

pany has also decided to drop the prices of its MS-DOS compatible bridgeboards which allow Amiga users to run standard PC software.

The A2088D XT bridgeboard has been reduced 29 per cent from \$699 to \$499 and the A2286AT is down 50 per cent from a pricey \$1,599 to \$799.

Even so, Commodore UK cannot be swayed by the decision of the larger American company.

The British market has its own quirks, and the presence of the successful Amiga 1500, which acts as a halfway house between the A500 and A2000, makes it difficult to drop the price of the A2000. ■

Computer aids design of Heseltine

Michael Heseltine had to rely on more than his wits when devising an alternative to the doomed Poll Tax. Senior party members have been using sophisticated computer technology to predict the effects of various alternatives.

The Department of the Environment has been feeding statistics into its DEC network. By running PC modelling software, it has predicted how various constituencies would react to the changes.

Not surprisingly, the Tories aren't keen to share the details of their number crunching exercise, but John Major's government is known to be anxious about its image in borderline constituencies.

One of the computer's tasks has been to state which election date would be most beneficial to Mr Major. Computers helped the former PM, Margaret Thatcher, to decide on the date of the 1987 general election. ■



• The man behind the new 'Heseltax'.

Soviet chip beats Intel?

Soviet chip makers are claiming to have developed a processor able to perform calculations 20 times faster than American chips.

The Minsk-based Integrated Corporation claims to have swept aside Intel in the race to produce better and faster computer chips. The company made its statement at a special Soviet/American research and development conference held in San Francisco last month.

Integrated had hoped that the Americans would be eager to tap into this technology, but many are doubtful that it really exists.

Professor Richard Jaeger of Alabama University met representatives of the Soviet company, and discussed the new chips. He said: "Based on what they showed me the idea appears sound, but details on the spec sheet were minimal."

Intel, very proud of its achievements in the processor industry, is not convinced. East Europe business development manager, Simone Cool, said: "I won't believe it until I have seen a viable product. They still can't manufacture 286 chips in volume - so I doubt if they could achieve this." ■

Wyse up

Wyse has launched a top-of-the range 486 to add to its Decision family of IBM compatibles.

The 25MHz monster boasts an internal 8Kb memory cache as well as an external 128Kb cache, so the processor can access RAM at full speed for up to 98 per cent of the time – and a Weitek 4167 math coprocessor handles heavy duty calculations. There are 16Mb RAM on the motherboard and seven slots for peripherals/accessories.

Wyse reckons its beast is “priced favourably” in comparison with competitors’ 386 machines. “The demand for 486 machines is growing,” offered a spokesman. Decision 486 retails at £2,995. Call 0734 342200. ■



• Wyse 486: full speed ahead.

Elite 1.5 on the way

MicroProse is to release a touched-up version of space-trading game Elite, in anticipation of the long awaited release of Elite II.

Elite Plus is being described as a ‘halfway house’ between the original and the sequel. The updated Elite has all the addictive gameplay of the original, but features cleaner and more colourful graphics.

“The game needed to be revamped,” explained marketing manager Peter Jones. “We’ve

updated the graphics, tuned the gameplay, put it in a new package and updated the manual.

“We’re not just tweaking it,” he added. “This is real virgin territory we’re entering here.”

David Braben, author of Elite, is still beavering away on the sequel. That isn’t expected to arrive until next year.

Elite Plus will be launched on the PC at the end of this month with a price tag of £34.99. ST and Amiga versions will follow if the PC game is a winner. ■

Counterfeit cartridges sold at third of normal price

CONSOLE PIRACY SHOCKS INDUSTRY

Thousands of counterfeited copies of top console games, which are hardly distinguishable from the real thing, are being sold in the UK.

Pirated copies of hit Sega Megadrive cartridges are passing hands here for about £15 – a third of the normal retail price. But the software industry – in association with the Federation Against Software Theft (FAST) – is moving swiftly to combat this latest strain of piracy.



• Alexander: ‘we must take action’.

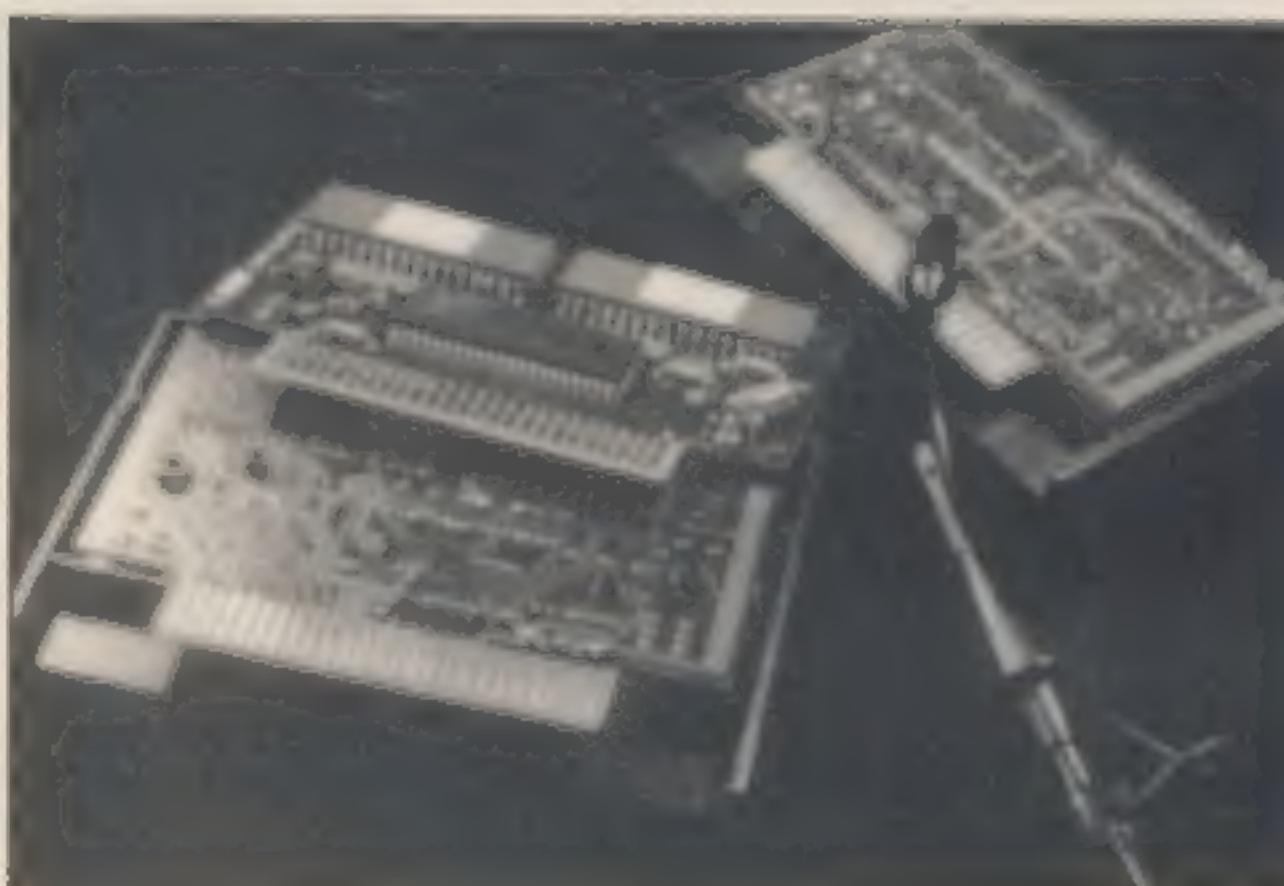
FAST, and Sega distributor Virgin, say that charges are being brought against various individuals. But Virgin Games boss Nick Alexander admitted that the problem is growing.

He said: “We have heard about this and legal action is already underway. This is a bit different from playground pirates and home users copying a friend’s software because, in those cases, it is just not feasible to take legal action.

“We want to put a stop to this before people start thinking that there are easy pickings to be had.”

The news that villains are already exploiting the mushrooming console market has sent shudders through the cartridge producing community because, spurred on by the promise of a piracy-free medium, software developers have been actively promoting games consoles for years.

Now the cartridge market has attracted professional pirates who are not only prepared to copy games, but are also dupli-



• Inside out: cartridges can be copied in a matter of minutes.

cating packaging and manuals.

Bob Hay at FAST revealed that 98 charges are soon to be brought against individuals involved in one operation. However, he refused to comment any further arguing that it would not be wise to “put people on a warning”.

He said that the Megadrive is attracting most activity at present, but said that other consoles had attracted interest.

Until recently the problem was confined to the Far East, and imports were a rarity. But unfortunately cartridge crackers in the UK have learned how to duplicate the games very cheaply. ■

• Turn to page eight to find out how cartridges are being cracked. There’s an exclusive interview with a console pirate – and the people who stand to lose the most also speak out...

International talks to limit supercomputers

Leading technological nations could be signing a new agreement which aims to limit the spread of supercomputers.

Japan, America and many European countries are growing increasingly concerned that their supercomputers are being used by certain countries for the development of high tech weaponry.

The Americans and Japanese are currently holding secret negotiations to renew their seven-year old accord under which neither country is allowed to sell certain computers.

Both countries are keen to update the terms of their agreement and to include countries now producing relevant supercomputers.

A US Government official told the New York Times: “We don’t want supercomputer exports to go unencumbered from those countries.”

Even so Japan and the US are having difficulty ironing out a few disagreements over the definition of a supercomputer. The Japanese say that the definition of a supercomputer should be set at two billion calculations per second, and that a mainframe at 800 million calculations per second.

But the Americans think those figures are too high and they want the limit to be 300 million and 100 million respectively. ■

Two for one Lotus deal

Lotus is to bundle Lotus 1-2-3 3.1 with the word processor Ami Pro at a special low price.

Bought separately the two packages would set you back £900, but they’re being offered together for £450 until the end of June. Existing 1-2-3 owners can upgrade for £140.

A Lotus executive said, “PC users are getting the industry standard spreadsheet with the best analytical capabilities, formating, printing and hard copy output available – with a first class word processor.”

Cheap Game Gear

The handheld games console price war is becoming ever-more bloody. So much so that last week the trade press reported Virgin is considering introducing its Sega Game Gear for a very tempting £79.

This move comes in response to a recent announcement by Atari that it would be soon selling a ‘bare bones’ version of the Lynx for the same price. ■

Virgin is now likely to follow suit with its own handheld game console which, the company insists, is much handier and easier to use than the larger Lynx.

A more expensive version of the Game Gear will be available for buyers who want relevant cables and a bundled game. The Game Gear is due to be officially launched here by mid-summer. ■



• Game Gear: how low can it go?

THE WEEK IN VIEW

Is Commodore about to push its high-end Amigas into the professional fray? Amiga Shopper editor Bob Wade argues that it's about time....

If Commodore does decide to cut the prices of the A2000 and A3000 in the UK it is a move that can only help to establish the Amiga as a viable low-cost alternative in many areas of professional use.

However, this is only one of many measures that need to be taken to firmly establish the higher end Amiga models as 'serious' computers - as opposed to the 'games console' image that the A500 has inaccurately picked up.

The Amiga is already the obviously affordable choice at the bottom end of the video production market, but it could become much more firmly established throughout that area if specific bundles were put together (including genlocks and other required hardware and software) and a significant amount of video trade press advertising done.

Those involved in video work that I have spoken to have nothing but praise for the Amiga until you start talking about the level of support they get from Commodore. I am not suggesting Commodore is not doing anything - it's just not doing enough.

Video could be to the Amiga what desktop publishing was to the Apple Mac.

The concept of the Amiga as an alternative to the PC in a conventional business sense is a non-starter. But what it can provide, from the A1500 upwards, is a degree of PC compatibility that should make it an automatic choice for anyone working in creative media - if only because acknowledged graphic power is combined with the ability to use much of the top PC software.

Commodore is clearly aware of the need for the Amiga to specialise in certain fields - the launch of the A3000 UX as a Unix workstation is evidence of that.

However, this needs to be followed through. As well as making price cuts Commodore should provide the bundles and the support necessary to make the Amiga the obvious choice for professionals in video, graphics, music, education, DTP.

If Commodore get it right, the possibilities are huge. ■

Disk library

Microsoft was at last week's CD-ROM Expo in Washington to unveil a multi-media reference library on CD, featuring an encyclopaedia, thesaurus, speaking dictionary, two quotations reference books, an atlas and an almanac.

Bookshelf for Windows will run on any PC running Microsoft Windows with multimedia extensions. It retails in the US for \$195, and should be launched here in a few months.

Microsoft also unveiled Multimedia Beethoven: The Ninth Symphony which features a digital stereo audio track and allows the user to explore any section from the four movements of the symphony.

There's also a chance to delve into the composer's life history, or study the architecture of the symphony. Beethoven costs \$80. ■

Catch a falling Star...



• Two of the best from the Star range

Star has sliced the prices of its Professional series of 24-pin dot matrix printers.

All four are described by the company as 'workhorses' which will serve the professional user well.

The FR10 has fallen from £459 to £399, the FR15 is down from £599 to £499 and the cost of the XB 24-10 has been shaved from £599 to £499. ■

At the top of the Professional range, the XB 24-15 has come down £200 from £789 to £589.

Outside the Pro series the LC15 - which is actually a wide carriage version of the LC10 - is down £100 to £299.

Buyers of any of Star's printers will be offered a free printing pack including colour ribbon worth £40. ■

How a PC survived Scud hit on Dharan warehouse

GULF VICTORY FOR COMPUADD

American PC manufacturer CompuAdd began boasting last week that its kit had been acknowledged as 'the standard PC of the Gulf War theatre'.

A letter to CompuAdd from the deputy chief of staff, US Army Command, begins: "This is just a short note of appreciation for the quality of your model 425 computer that this headquarters was fortunate to use during Operation Desert Storm and

Operation Desert Shield."

It seems thousands of CompuAdd PCs and laptops were in evidence throughout the campaign and "only two failed to boot up, having been damaged in transit".

The letter goes on: "An example of how well your computers are constructed came to light during the unfortunate incident when the Scud missile impacted on the tin-sided warehouse in Dharan. One of your Model 425

computers was inside and was literally blown out the side of the building, landing some 50 feet away.

"Although the impact damaged a couple of boards, the case remained intact and we were able to repair it... it was remarkable that it did not disintegrate, as it was very close to the point where the missile impacted."

Most of the 425s were used for project management, communications and administration in rear support areas, although some laptops were taken into Iraq by front line troops during the ground invasion.

As part of a £17 million deal with the US Central Command in Saudi Arabia, CompuAdd supplied 2,500 PCs to the Gulf, including hundreds of 316SL laptop machines.

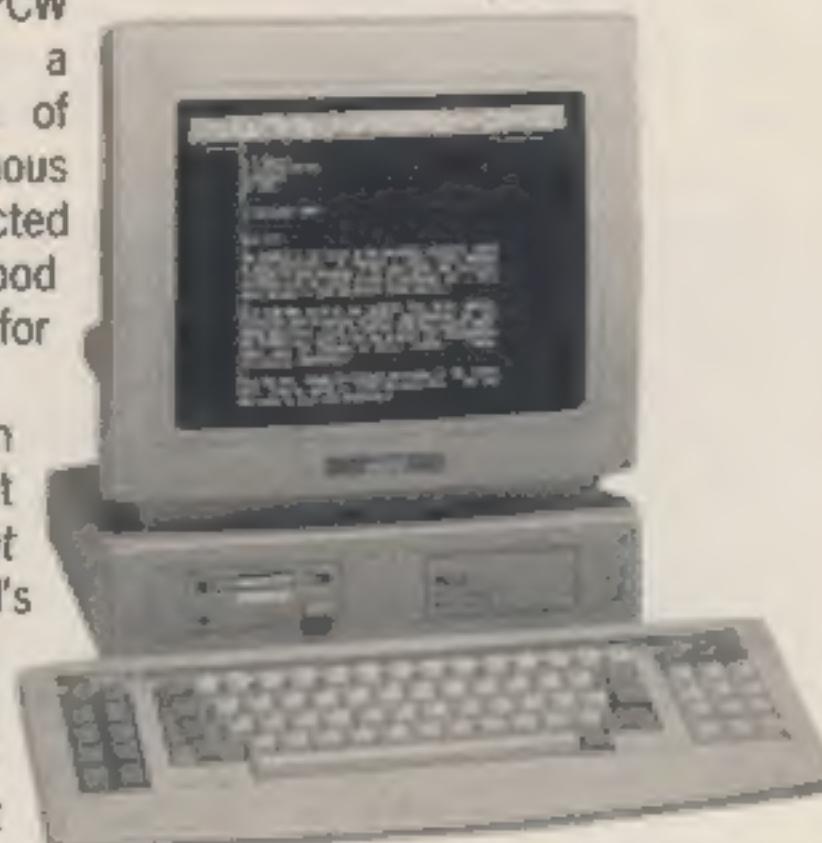
Texas based CompuAdd also supplied full networks for use on American navy ships. ■

PCW's flight of fancy

There was a time when PCW owners could expect a respectable release rate of games. But that famous green screen hasn't attracted too much in the way of good quality leisure software for the past couple of years.

Now Digital Integration is to launch its popular flight simulation F16 Combat Pilot for Amstrad's workhorse. F16 has already appeared on just about every home computer format, and it picked up the prize for best flight sim at the European Computer Software awards last year.

PCW owners can take the cockpit of a £20 million piece of



• PCW: a game at last

kit for just £25. Call Digital Integration on 0276 684959. ■

NESS on your lap



• NESS 286: 'rugged and efficient'

NESS Computers has released a 286 laptop, which it claims is a 'rugged and efficiently portable'.

Measuring about a foot square, the NESS 286 operates at 16MHz and comes with 1Mb of RAM on board, expandable to 5Mb.

For intensive maths processing there's the optional 80287

mathematical co-processor.

As well as the normal 3.5-inch floppy drive there's a 20Mb hard disk, and you can connect an external disk drive through the 25-pin D-type connector.

It retails at £1,099.

You can contact NESS on 081-452 8233. ■

PC1512 and 1640 are wiped off the price list

AMSTRAD FIRES THE OLD GUARD

Amstrad has confirmed that it is phasing out the machines which originally launched the company so successfully into the professional PC market.

The PC1512 and PC1640 – released in 1986 and 1987 respectively – have been wiped off Amstrad's price list. A spokesman for the firm said buyers could now hunt around to find the best prices available as Amstrad no longer has a recommended retail price for either machine.

In addition the highly acclaimed Generation 3 PCs are to be chopped in price. Cuts range from £100 for the bottom end unit to £250 at the top of the range.

The entry-level 3086 with single drive is down by £100 to a very reasonable £350, while the same machine with dual drive

and hard drive is also down – by £200 to £600.

The faster 3286 single drive unit has been dropped by £150 to £500 while the hard drive, dual floppy version is down £250 to £750.

The new price structure will come into effect on April 20th.

Amstrad has decided to continue its policy of bundling the 3086 with the DMP3160 printer and Migrant Ability software, and the 286 will still be sold with a free copy of Lotus 1-2-3.

A spokesman for Amstrad explained: "Although we are currently running a number of successful software and printer bundles, we feel that we must make a statement on the Generation 3 price, giving the range an ultra-competitive edge over the competition."

On the phasing out of the PC1512 and 1640 a spokesman



• PC 1640: great for its time, but was dating badly

said: "Those machines are no longer listed, although there are stocks still going through the distribution channels – so you'll be able to pick them up at very competitive prices."

"Both PCs did very well in their time, but now the company

must move on."

The 1512 was the first PC to be offered at a price which came well within many small businesses' budgets, and it also appealed to home users. In turn, the 1640 offered more for a similarly reasonable price. ■



• The ads: Dell is to fight on

Take your time

A new PC program will allow you to instantly switch between up to 99 programs or files at once.

Switch-It 3.23 from Guildsoft cuts out frustrating waiting time. For example it will allow you to rapidly cut and paste between different spreadsheets, databases and word processors.

"Both its switching and data transfer capabilities can save the average PC owner an enormous amount of time," said project manager Mike Holman.

Switch-It will run on any PC with a minimum of 512K of RAM and costs £79. Call 0752 251155. ■

Dell ad ban

Dell Computer has been ordered to stop publishing adverts comparing its PCs to Compaq's.

A judge in the High Court Chancery Division ruled on 19 March that the ads could not be published until a full trial had been heard.

At the end of January Compaq slapped a writ on Dell to prevent Dell from publishing the ads. Under British law comparative advertising is allowed so long as it is fair and accurate.

But this first round set-back for Dell won't stop the firm from fighting to keep the ads, which have been running since 1987, and invariably feature Compaq and Dell PCs lined up, with technical specifications and prices compared. ■

Nintendo to open Tokyo games school



• A new school will be dedicated to students who wish to master the NES.

Nintendo has set up a special university dedicated to train programmers to produce games for the Japanese company's NES console and Super Famicom.

Thousands of budding games programmers are likely to apply for one of the 30 places in the Tokyo school. Those who pass through can expect a healthy career crafting some of the best known games in the world. ■

The video games school is a joint project between Nintendo, and an advertising agency called the Dentsu Group. Nintendo has called the school 'Mario' after its most famous game character.

Already, Nintendo has been running a once-a-week learning course for would-be Nintendo programmers, and after the first year many of the 16 students are writing their own games. ■



Agenda and modem: phone link

Modem on the Agenda

A data and sendfax modem for the handy Agenda pocket computer has been released by MicroWriter Systems.

Users will be able to send information down telephone lines, or even link up to a printer. The Agenda is one of the few computer products to win the UK Design Council award, awarded in 1990 for its ergonomic one-handed keying system.

The Agenda Modem, developed by Dataflex on Microwriter's request, is a conversion of Agenda's pocket modem for PCs. It offers conventional V21/22/22bis (300-2400bps) operation and costs £349. ■

Olivetti boss' trial

Olivetti chairman Carlo De Benedetti is to stand trial on criminal charges arising from the collapse of one of Italy's largest banks in 1982.

The Milan Appeal Court upheld an appeal against an earlier ruling clearing De Benedetti of criminal charges.

Before taking over at Olivetti, De Benedetti had held the vice-presidency of the Ambrosiano bank for two months just before its spectacular collapse.

Ambrosiano – the Pope's bank – went down owing \$1,300m. 35 people have already been convicted over the crash. ■

Counterfeit cartridges have arrived in such a short space of time, and with such a degree of professionalism, that the software industry has been taken almost unawares.

Some of the copies being sold on market stalls around the country are exact clones of the originals and even software houses and game developers cannot tell the difference. In fact, the only real difference is price. Pirated copies of *Strider* on the Sega Megadrive sell for around £15 instead of the official price of £45.

FAST (Federation Against Software Theft), an organisation funded by software companies, is keen to keep the pirates off-guard. Chief executive, Bob Hay, said: "We're dealing with enquiries relating to cartridge-based software, but I wouldn't say that the market is flooded."

Hay refuses to comment on the size of the problem, the origin of these clones and the length of time they have been available on the market. Nobody has yet been prosecuted for copying cartridge games. "We are dealing with allegations involving Sega Megadrive cartridges and Sega isn't the only cartridge-based product involved," reveals Hay. "It's too early to say anything further. I don't want to put people on warning. One case will involve 98 charges being brought against the people concerned. They are not yet a matter of public record."

'Terry', a self-confessed cartridge counterfeiter from the South East, told us any game available on Megadrive, NES, PC Engine, Nintendo Gameboy and the Sega Master System can be copied in less than 10 minutes – provided you have some technical know-how and the right hardware and software. The Commodore 64GS and Amstrad GX-4000 games systems have largely remained untouched because there is not as much profit in copying games on less popular consoles.

"It is easy. It only takes me 30 seconds to read a four-megabit cartridge and roughly 10 minutes to burn it out onto an EPROM," he says. "Every system is copyable. I do it for money. It takes me approximately £5 to make a cartridge which I then sell for £15. You can alter the code, but you don't because it is commercial. They're copied professionally, they look identical to the original. You can't tell the difference. Some are even sold in shops at full-price."

BABBLE BUSTER

- An EPROM programmer is an electronic device that connects to your computer and reads program files from either the computer's memory or a disk and writes them to an EPROM.

- An EPROM is an Erasable and Programmable Read Only Memory chip. High intensity ultra violet light will erase it and leave it 'clean' much in the same way that a drive can 'format' a disk and leave it clean.

- The clean EPROM is placed in the programmer where the program is 'burned' on to it electronically. This leaves the EPROM programmed and stable and the software burned on the EPROM is safe there as long as no high intensity ultra violet light is played on it. Any ROM or EPROM can be read by the programmer and the file saved to memory or disk for burning into an EPROM.

- EPROMS are used by hackers and crackers as a simple way of transferring ROM software to a medium that can be built into pirate cartridges.

"It's easy... Every system is copyable."

OUTRAGE AT COUNTERFEIT CARTRIDGES

The next console cartridge you buy could be an illegal pirated clone. Here, Rik Haynes discovers how the cartridges are cracked, and what the industry response is likely to be...

"*Strider* is currently top of the pirated charts. The plastic cases, covers and stickers are supplied by a company in Glasgow. You have to go to a professional EPROM specialist with any cartridge over four-megabits in size."

ALL YOU NEED IS...

Electronic Arts is one of the leading publishers of Megadrive games in Europe and America. Recent titles have included such hits as *John Madden American Football* and *Populous*.

Simon Jeffrey, spokesman for Electronic Arts, said: "Yes, it is easy to copy cartridges. Basically all you need is an EPROM burner. A bit of hardware that allows you to burn code onto an EPROM, a programmable cartridge. They're hard to get hold of and vastly expensive."

"Theoretically, someone could get a cheap EPROM burner from a hardware magazine for a few hundred quid provided you had the technical know-how to make it work. For any kind of extensive mass-copying operation you need to buy the EPROM's from Taiwan. You need a lot of money and to be extremely brainy."

We asked Jeffrey if software companies can prevent piracy. "We don't have security chips in our carts the way that Nintendo does. We don't see any need. Any security measures are seen as a big challenge for the hackers. No matter how clever you are, there's always someone more clever who can bust it. There's no point in investing large amounts of money into something which is going to be broken. You're just throwing money away."

"The people who buy console hardware and software are less technically minded than high-end users of Amigas because there's less opportunity for them to get inside and actually program on it. You can't program or copy a console without extra hardware. It is our goal to provide quality entertainment software to the mass-market. We see the Megadrive as an exciting hardware platform and market. There's not much that worries us yet because this isn't as big a problem as disk-based copying."

"I know there's a few dodgy operations in Taiwan getting hold of Japanese carts. Some are duplicated, others are grey-buying Japanese carts and dumping them



• Cracking a game cartridge takes a matter of minutes.

on the European and American markets. Counterfeit packaging is very rarely up to scratch, they have poor quality print and lack of full-colour artwork."

BLOW-CARTS

Peter Molyneux is boss of Bullfrog, the games development team responsible for *Populous* and *Powermonger*. His flair for original arcade-strategy games has met with considerable worldwide success on both computer and console formats.

"I haven't seen these counterfeit carts, but I know that they're around. Not so much in this country, but in Japan and certainly in the Far East," says Molyneux.

Bullfrog has more to lose from cartridge copying than many other games developers. *Populous* was one of the first games released on the best-selling Nintendo Super Famicom console and is also available on the Sega Megadrive and coming soon on the NEC PC Engine and Sega Master System. Console versions of *Powermonger* are also on their way and Bullfrog is currently writing a sequel to *Populous* (to be released later this year).

"Megadrive game prices are stupid, some of them are nearly £60. It's ridiculous. Half-megabyte EPROM's cost about £5 each if you buy them across the counter at your local electronics store. If you bought them in bulk the price would radically drop."

"They're relatively cheap. All you need is an EPROM burner which costs £100 and a method of downloading the original game's code and data into an EPROM. This stage is usually handled by a PC micro with custom-designed software."

The tricky bit is the circuit-board which is made especially to fit inside the console. It's not something that your backroom-boys would do, only if you're going to sell a couple of hundred copies.

He goes on: "It's like any piracy, you can't stop it. You need the computer to suck out the information, hold it, then shove it out again. You can use a special EPROM system that doesn't require a computer, but you lose out on the benefit of being able to alter the game and say, put a new name on the title screen or put more than one game on a cartridge."

The so-called compilation carts are all the rage in the underground circles according to Terry'. There is even one NES cartridge with a staggering 63 games on it! Now pirates are working on special Megadrive cartridges which have three games on them, with a switch on top to select which one you want to play.

Super Famicom is generally regarded as the most advanced games console available today and over 500,000 of them are sold every month in Japan alone. Now the Far Eastern pirates are cashing-in on the latest booming market.

Copies of popular Super Famicom games like *Super Mario World* and *F-Zero* have started to appear in places as diverse as Tokyo, Hong Kong, New York and London. So far it has been easy enough to spot these imposters – thanks to shabby stickers and strange mauve cases – but soon the pirates will perfect their deception skills and conquer this new challenge. Soon, you won't be able to tell the difference between the original and a copy. ■

The New 1 Meg Amiga From Digicom

Following The Huge Success Of Our F-19 Digistar Offer, We At Digicom Are Proud To Present The Meanest Pack Available For The Amiga A500. This Unbeatable Deal Now Includes Commodore's Screengems Pack PLUS the A501 RAM/Clock Upgrade Plus Our Very Own Exclusive New Arcade Smash Hits Pack And The Chart Topping 1 Megabyte Version Of Kick Off 2! Includes: Amiga A500 Computer 512K Keyboard PLUS A501 512K RAM/Clock Expansion Fitted To Give 1 Meg Memory Total ● Built-in 1 megabyte DS/DD 3.5" Disk Drive ● Multi-Tasking Operating System ● Latest Kickstart And Workbench 1.3 ● Superb 4096 Colour Graphics ● Speech Synthesis ● 4 Channel Digital Stereo Sound ● Notepad Word Processor ● Commodore Mouse Plus 3 Owners Manuals ● Amiga Basic Program Language ● T.V Modulator And All Connecting Leads And Cables



Notice : The Memory Upgrade Supplied With This Offer Is The Official Commodore A501 Ram Expansion Worth £99.00 ANY Alternative Expansion Unit Will Invalidate Your Warranty

Plus This Great Software : Shadow Of The Beast 2 ● Days Of Thunder

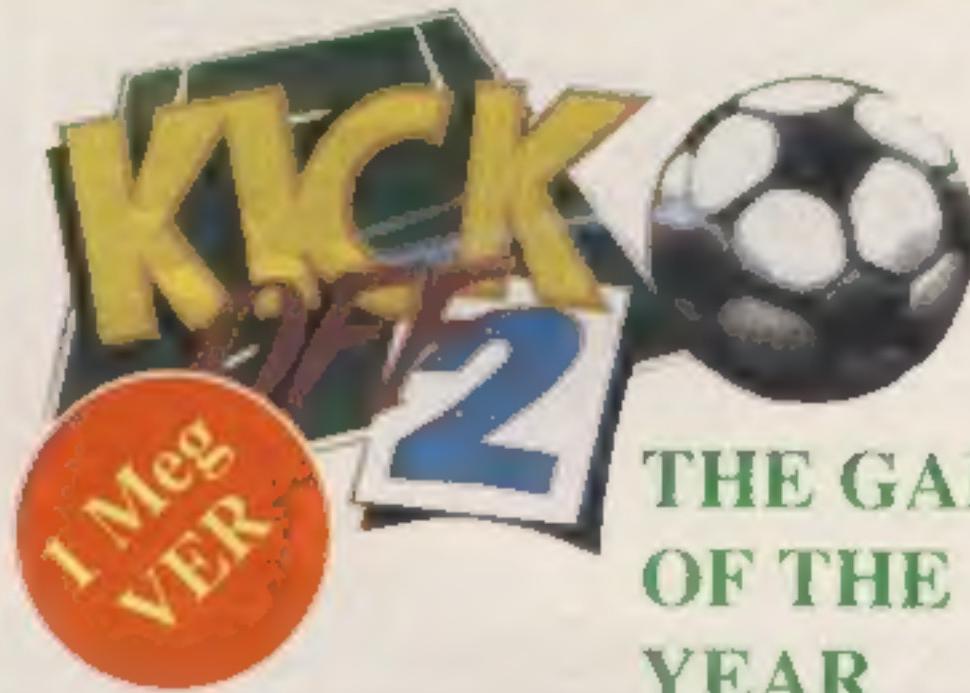
● Back To The Future 2 ● NightBreed ● Deluxe Paint 2

Plus Exclusively to Digicom

Bring The Atmosphere Of The Arcade To Your Home With The Arcade Smash Hits Pack From Sega, Incorporating Five Of The Most Exciting Games Around !

Thunder Alien Out Shinobi After
Blade Syndrome Run Burner

Plus : A High Quality Microswitched Joystick, Amiga Tailored Dustcover, 10 Blank Disks And Disk Storage Box, Mouse Mat And....



THE GAME
OF THE
YEAR

Complete Package Price Only

£399.00

1 Meg Amiga Screengems Pack (As detailed in the above offer) Plus The Superb Philips CM8833Mk2 Multipurpose Colour/Stereo Monitor

Free Amiga/8833 Lead And Monitor Dust Cover £628.00

1 Meg Amiga Screengems Pack (As detailed in the above offer) PLUS Philips CM8833Mk2 (Colour/Stereo Monitor)
Star LC200 9 Pin (Colour Printer)
Free Printer Dust Cover & Lead £828.00

HOW TO ORDER

By Phone:
Call Our Credit Card Order Line
And Quote Your Credit Card Details To Our Helpful Sales Staff. We Accept ACCESS, EUROCARD, VISA, MASTERCARD, AMEX, BARCLAYS CONNECT, SWITCH, and LOMBARD CREDITCHARGE.

By Mail:
Simply Write Down Your Order
And Post It To Us With A Personal Cheque,
Postal Order, Bankers Draft Or Building
Society Cheque Made Payable To "Digicom
Computer Services Ltd".
(Personal Cheques Require Time To Clear Before Despatch)

All Prices
Include VAT
And FREE
Delivery

Next Day Courier Delivery At £5.00 Extra

The New Amiga 1500 Is Here !

The Ultimate Personal Home Computer Designed To Cover Every Computing Requirement, From Business To Leisure And From Design To Education

Includes : 1500 CPU with One Megabyte of Memory :

Separate Keyboard : Additional Disk Drive
Optional IBM Compatability
9 Expansion Slots Plus This Great Software

THE WORKS PLATINUM EDITION

DELUXE PAINT 3
THEIR FINEST HOUR
BATTLE CHESS
SIMCITY+
TERRAIN EDITION
POPULOUS SPECIAL



1500 System With Commodore 1084SD Colour Monitor And 52MB Autoboot Hard Drive Only £1249.00

1500 System Only £679.00
1500 System With Philips 8833Mk11 £909.00

Phone Our 24 Hour Hot Line
(0908) 378008
8 Lines Open
Fax (0908) 379700
All Major Credit Cards Accepted

Visit Our Showroom Open Mon-Sat 9.00am-5.30pm

DIGICOM

36-37 Wharfside, Fenny Stratford, Watling Street
Milton Keynes MK2 2AZ

Wharfside Is Opposite The Bridge Pub On The A5 Watling Street
Prices And Specifications Are Subject To Change Without Notice. E&OE.

★ Digicom Offers You ★

- ★ Free Catalogue (With All Orders)
- ★ Regular Newsletters And Special Offers
- ★ 12 Month Guarantee On All Product
- ★ 30 day Replacement Of Faulty Product
- ★ Technical Helpline
- ★ All Product Tested Before Despatch
- ★ Price Or Product Match

PHOTO PLAY

Most budding computer artists are restricted to playing around with computer generated graphics because the technology needed to digitise images from the real world using a video camera remains out of the economic reach of most enthusiastic amateurs, and the results are rarely as sharp as you want. Nik Williams Broadcast believes it can provide the answer with its Pictureware computer picture library for the Amiga.

The library was launched this February with 24 sets of disks, each set comprising two disks of five pictures each. The pictures are available in two formats which will work with the vast majority of Amiga arts and graphic packages, such as *Digi Paint*, *Deluxe Paint* and *Photon*. The HAM (Hold And Modify) files offer over 4,000 colours while the more commonly used IFF files maintain a very high picture quality with a somewhat reduced 32 colours.

Each set concentrates on a different subject and the range is impressively varied. Titles available at the moment include such diverse offerings as *African Famine*, *The Nudes*, and *Hippos*. And the library is set to continue expanding with the company aiming to make 2,000 pictures (400 disks) available by September.

BROADCAST QUALITY

The actual digitisation quality of the pictures is very impressive. This can be attributed to the fact that the camera used in the digitisation process is a £32,000 Sony Betacam which is used for recording broadcast television standard pictures. Indeed, Nik Williams Broadcast is an independent company involved in television production, and, according to co-proprietor Nik Williams, the library came about, 'almost by accident' when, just prior to Christmas, the company was working on a project for mainstream television for which they needed some digitised images.

'We had *DigiView*, but we couldn't get hold of any decent pictures,' explains Williams. So, basically, the



If you want to play with digitised images on your Amiga, here's a cheap alternative to a video camera and frame buffer. Dave Golder explains

company decided to digitise its own images. 'We assumed there was probably a lot of other people doing the same thing, but we investigated it, and there weren't.'

Williams now believes this is the first computer picture library available to users of desktop computers, which, for an idea which seems so obvious and so simple, is surprising. But the company has not settled for offering a half-baked service. The pictures themselves are the sharpest, steadiest and most colourful you could expect for the file formats and they are available at a very reasonable price. One disk will cost you £4.99 while orders of two or more will set you back just £4.50 each. That works out at less than £1 per picture.

Occasionally some of the pictures, especially dominated by various shades of the same colour, are slightly disappointing on the more limited IFF format, although this is the fault of the format itself rather than the process. Perhaps the library should not be over ambitious in its choice of subjects.

PD CATALOGUE

There are currently two catalogue disks available for 90p in the public domain either from the company itself or from various PD libraries. They list the sets of Pictureware disks currently available (12 on each catalogue) as well as carrying miniature 'sample' versions of all the pictures available. The company plans to release a further catalogue each every month, with details of the 12 latest sets of disks. There are also Pictureware demonstration disks available in the Public Domain, also for 90p, though the quality of these and the catalogue disks - there is noticeable interface flicker - belies the standard of the real McCoy, so don't be put off.

Williams sees the pictures in the library being used in a similar way as clip art, reckoning, 'they give you a super starting point if you are into computer art.' He suggests they could be used as background for titles, animation and games as well as the basis for creating interesting Hockney-esque artwork. He is also eager for the library to appeal to commercial users, citing DTP and DVP (Desktop Video Publishing) as possible areas where it could be employed.

Whether this latter objective is attained remains to be seen. While the appeal of the library to hobbyists and enthusiasts is obvious, I would have thought that

professional users would have preferred to commission their own pictures or even invest in their own digitisation equipment, as this would give them the chance for a much wider and more exclusive range of pictures. The Pictureware library might have an impressive selection, but even with 2,000 pictures, if a company needs a picture of, say, a teapot, then the choice is going to be limited.

TOP SELLERS

According to Williams the top selling disks so far have been the *People*, *Cars* and *Children* categories so there will be further volumes of these among future releases. *The Nude* disk has, apparently, been very popular among arty types. The *Edwardian Photo* disk is very impressive, especially considering the fact that many of them have been digitised from decades-old pictures that were no larger than a cigarette packet.

There is a copyright on the disks, so while copying for private use is unlimited, if you want to use the pictures commercially there is a fee - although again this is not extortionate. It works out at £7.50 for the right to use the picture, regardless of whether it is in its original form or if you have played around with it and/or distorted it in any way, and between 10p and 1p on every copy, depending on how many you need. The pictures on the PD disks, of course, can be used the same as any other PD disk.

For further information, contact the library's general enquiries line on 0792 470503. The 24 hour credit card hotline for ordering is 0792 645946. The catalogue and demo disks are also available from the company and other public domain libraries.

PRE-FORMATTED FLOPPIES

In its search for the best pictures around, the library has amassed hundreds of pictures which have not ended up on the main disks. These have not been wasted, however. Pictureware has placed all these pictures on to specially pre-formatted floppy disks in a variety of formats from big RGB files to small brush files in both IFF and HAM formats and is selling them in packs of 10 for £9. There is nothing regulating what goes on to these disks, so if you order a set you could be getting anything. You might find some absolute gems which you can save, or, if not, you can simply delete them and use the floppies for your own work. ■

PHOTOS CURRENTLY AVAILABLE

- People 1&2
- Children 1&2
- African Famine 1&2
- The Nude 1&2
- Edwardian Photos 1&2
- Art In Photography 1&2
- African Animals 1&2
- Silverback Gorilla 1&2
- Views of Vietnam 1&2
- African Pygmies 1&2
- Motorbikes 1&2
- Film Crew On Location 1&2
- Hippos 1&2
- Rocky Coastlines 1&2
- Beautiful Sunsets 1&2
- Marinas and Boats 1&2
- Compilation Set 1&2
- Aeroplanes 1&2
- Castles 1&2
- Household Objects 1&2
- Cuddly Toys 1&2

THE WORLD'S FINEST **DISKS** **AT TOTALLY UNBEATABLE PRICES!**

GENUINE KAO DISKS! THE WORLD'S FINEST!

AVAILABLE IN BLACK, BLUE, YELLOW, FOG WHITE, GREEN, RED AND ORANGE !

100 (110!) * GENUINE KAO 3½" COLOUR DSDD DISKS FOR ONLY - £42.99
200 (220!) * GENUINE KAO 3½" COLOUR DSDD DISKS FOR ONLY - £79.99
300 (330!) * GENUINE KAO 3½" COLOUR DSDD DISKS FOR ONLY - £119.99
400 (440!) * GENUINE KAO 3½" COLOUR DSDD DISKS FOR ONLY - £159.99
800 (880!) * GENUINE KAO 3½" COLOUR DSDD DISKS FOR ONLY - £299.99

AND FOR YOU BIG USERS!

1600 (1760!) * GENUINE KAO 3½" COLOUR DSDD DISKS FOR ONLY - £549.99

JUST QUOTE YOUR COLOUR PREFERENCE WHEN ORDERING!

E.G. 100 RED + 200 BLACK =

£42.99 + £79.99 = £122.98

AND!

REMEMBER! YOU GET 10% EXTRA!

IF YOUR ORDER RECEIVED BY THE 17TH!

THAT'S 110 RED AND 220 BLACK DISKS YOU'LL RECEIVE FOR £122.98!*

Offers subject to availability.

SO HURRY!

Why buy cheap disks from manufacturers you've never
even heard of (or ever will!) when you can buy
the WORLD'S FINEST for the same price?!!

THESE DISKS ARE THE REAL THING SUPPLIED
SEALED IN KAO PACKAGES

SO YOU KNOW THAT YOU'RE GETTING GENUINE 100% KAO,
100% CERTIFIED, 100% GUARANTEED FOR LIFE!

**ALL PRICES FULLY INCLUSIVE - POST AND PACKING INCLUDED.
ORDERS FOR 800 DISKS AND ABOVE WILL HAVE DELIVERY BY PARCELFORCE!**

ALL DISKS ARE GUARANTEED FOR LIFE WITH A 1 FOR 1 SWAP.

ALL DISKS COME INDIVIDUALLY WRAPPED WITH LABELS.

UNCONDITIONAL MONEY BACK GUARANTEE!

THIS DOES NOT AFFECT YOUR STATUTORY RIGHTS.

CHEQUES/POSTAL ORDERS PAYABLE TO PIONEER MEDIA,
COMMUNICATIONS HOUSE, 26 BRITON CRESCENT, SANDSTEAD, SURREY CR2 0BJ
GOODS DESPATCHED WHEN FUNDS ARE CLEARED - TURNAROUND APPROX 5 DAYS.
STRICTLY MAIL ORDER.

* Orders received 18th March and after will not qualify for free disks.

VIRUS FREE PD

Amiga Public Domain Software

OVER 1300 PD DISKS AVAILABLE

PD SOFTWARE HELPLINE

THOUSANDS OF SATISFIED CUSTOMERS

OVER 100 DISKS ADDED EVERY MONTH

MOST ORDERS SENT WITHIN 24 HOURS

ALL DISKS DISTRIBUTED VIRUS FREE

BUY ANY TEN PD
DISKS AT £2.00 EACH.
AND PICK ANOTHER
5 FREE !!!

PD STARTER PACK.

Only £5.00 inc P&P

Essential Utilities 1
Dynamic Demos 3
Demons Slides 3
Reflections Music
and our catalogue

15 PD DISKS = £20.00 inc 5 FREE
ONLY £1.00 FOR EACH SUCCESSIVE DISK.
EG: 16 PD DISKS = £21.00
17 PD DISKS = £22.00
20 PD DISKS = £25.00
Call for details of discounts on bulk orders

OVER 1300 PD DISKS CATALOGUED

ADULT GAMES AVAILABLE OVER 18's ONLY

GAMES

- 843 Metagalactic Llama's
- 1064 Lettrix (great)
- 1020 Master of Town
- 1204 Wet Beaver Tennis
- 849 The Holy Grail
- 850 Breakout Con Kit
- 830 Quiz Master
- 670 Monopoly
- 595 Cave Runner
- 1209 Wacko in Wonderland
- 832 Agatron Games
- 531 Blizzard
- 530 Pacman
- 525 Tennis 1 meg
- 509 Paradroid
- 1207 Frantic Freddy
- 505 Drip
- 255 Flaschbier
- 856 Xenon 3 etc
- 117 Moria RPG
- 154 Track Record 1 meg
- 534 Games Disk 1
- 1179 Chess etc
- 1184 Mastermind etc

UTILITIES

- 941 Art of Virus Killing
- 659 Essential Utils 1
- 1206 Mandelbrot Maker
- 567 Noisetracker etc
- 152 Quick Base
- 312 Word Wright
- 337 Ultimate Utils
- 334 Le' Copiers
- 613 202 Utilities
- 341 57 Utilities
- 1043 MVK V2.0
- 336 Full Force Utils
- 342 Acu Utils 22
- 1208 Database Wizard
- 1078 Essential Utils 2
- 1099 Pro Tracker 1.1a
- 1202 RSI Demo Maker
- 1146 Icon Magic
- 1180 Amic
- 1159 Red Devil Utils 6
- 1158 Red Devil Utils 7
- 1157 Exorcist Killers
- 1151 C-Light
- 1156 Driver Generator

TOP TEN

- 1078 Essential Utils 2
- 1099 Protracker 1.1a
- 1079 To Kill a Mole (16)
- 1209 Wonderland
- 1202 RSI Demo Maker
- 659 Essential Utils 1
- 1206 1162 Home Utils
- 1117 Budbrain 2
- 1043 MVK V2
- 1064 Lettrix

MUSIC

- 1081 Kick Squad 1 meg
- 1087 Glidescope III
- 1089 Sonix Systems 4
- 1093 Hanky Panky
- 1094 Intuition Finland
- 1126 Sound of Silents
- 1154 TMN Turtles
- 1155 Crusaders
- 1174 Jakes Music
- 1181 True Energy

EXCLUSIVE WARE CROSSED SYSTEM

Mega Fast Shoot Em Up, Silky smooth scrolling digitised SFX & speech multiple weapons and more. Exclusive to us

Only £3.99 inc P&P

Crossed system is
NOT PD

DO THE BART MAN

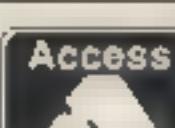
A 3 disk version of the No1 hit single
Only £3.00 inc P&P

PROTRACKER COLLECTION

Includes Protracker v1.1a and 9 great instrument disks.

**10 disks,
Only £7.95 inc**

FOR JUST £1.00 YOU CAN RECEIVE OUR HIGHLY PRAISED CATALOGUE DISK, GIVING DETAILS OF OVER 1000 PUBLIC DOMAIN DISKS. OR ORDER 3 OR MORE OF THE ABOVE AND RECEIVE IT FREE OF CHARGE.



3 DISKS OF CLIP-ART NOW ONLY £3.00. ALMOST 400 PICTURES



Catalogue Disk Available at £1.00 sent FREE with all orders

Send Cheque, or Postal Order to:

VIRUS FREE PD (Dept NCE), 23 Elborough Rd, Moredon, Swindon, Wilts, SN2 2LS, England.

Tel: 0793 512321 Fax: 0793 512075

All prices include P&P in UK.* Minimum order of 3 Disks, overseas orders welcome but please send Euro cheque or bankers draft with order. Please add £3.00 towards postage and packing.

CONTENTS

MACINTOSH	14
CPC.....	15
AMIGA.....	18
ARCHIMEDES.....	20
C64.....	24
SPECTRUM.....	25
ST	26
CIRCUIT CITY	29
WHOLE WIRED WORLD.....	28
TECH TIPS	32
CENTREFOLD	36
EXPRESS ON-LINE	46
PROGRAMMING.....	43
THE PD COLUMN	44

**SHOPPING
EXPRESS**

THE VALUE-PACKED GUIDE TO YOUR MACHINE AND MORE

EXPRESS MAIL

Write and tell H F-W what you think about almost anything under the Sun! Reach him at: Express Mail, 30 Monmouth Street, Bath BA1 2BW. Sorry, no personal replies, even with an SAE and remember, only SOME letters win a fiver!

With your host
Haydn - the man
with the fivers
to give away

**■ Super service**

One often hears criticism of dealers in the computer business, but my experiences with such people over the past few years have been excellent and I'd like to publicly thank a few people...

Silica Systems really deserve credit for their service. I bought an Atari STE from them which gave no audio output, so they replaced it at once. After a few months it would no longer format disks - they repaired it. Six months later, the same problem cropped up and Silica speedily repaired the machine - even though the guarantee had expired.

I was just unlucky with my STE. Nevertheless, at all times Silica's staff were extremely helpful and speedy in their response.

I have also purchased many disks for my STE from public domain libraries. I would like to single out Goodman Enterprises and the ST Club for excellent advice and service. For my Amstrad I used WACCI, who have also always given excellent advice and service.

Maybe I have been lucky, but I've bought many items from mail order houses over the years and always had good service - I wouldn't like to pick out any particular names, but I have used the ones with high-profile adverts in magazines such as Express, Amstrad Action and ST Format.

I'm not saying there are no 'sharks', but overall there seem to be a lot of companies in the computer sector that really make an effort.

Jan Drodz, Sittingbourne, Kent

■ Eyestrain?

I use a computer as part of my job every day and I am concerned about the effect that this might have on my eyesight. Can you tell me what equipment is available - like special glasses or screen filters that can prevent eye trouble - and which are

the most effective? Perhaps this could be the subject of an article in a future issue?
B Richards, Dartford, Kent

The answer to your question is a bit beyond the scope of one of my replies Mr Richards - there's a host of products on the market which claim to reduce the bad effects of sitting in front of a computer monitor all day.

The first steps are as follows: get your eyes tested by an optician, and if necessary, get glasses; make sure that the lighting in your office doesn't make reading what's on screen difficult; take regular short breaks from the VDU; try and set up the computer so that you can glance up from the screen and look across the room or out of a window from time to time - thereby re-focussing your eyes; and try to sit at least three feet away from the monitor.

As to anti-glare screens and glasses and radiation-reducing devices - look out for an overview in a future issue. Andy S our illustrious Ed is trying slot in a feature on the subject, so readers with advice to offer or interesting experiences should drop me a line.

H F-W

■ Square eyes

Here are some more 'Seen on Screen' machines:



A while ago, The Money Programme had a report from America about IBM and visited a business computer centre where there were lots of computers (surprise surprise!). These included a Commodore Amiga 2000 (in its own separate display room), some Apple Macs, a Samsung PC and some IBMs.

There's the proliferation of computers that seem to adorn the desks of all the newsrooms these days. And another place to spot computers is Grange Hill, where they've only recently had one installed.

Talking of childrens' programmes, on Sesame Street I recently spotted an old-style Commodore 64 which supposedly wasn't working - no surprising really, as the power lead wasn't connected. Super Grover came to the rescue - well, hopped around on one leg for a bit, anyway. The problem was soon fixed by switching it on from the back (!) and a strange picture appeared on the screen of a blue blob on a black background, which I think was meant to be a spider.

Finally, I spotted a computer in the Scottish Power/Hydro Electric TV advert, along with what looked like an Outrun clone. But readers living in England may not have seen this advert...

Scott Kier, Moray, Scotland

Well, for all that assiduous TV-watching I'm going to award you a fiver Scott. A very good multi-mention 'Seen on Screen' missive my man...

H F-W

■ The joy of BASIC

I suppose it was inevitable that an Amigaphile would write to defend the indefensible. My letter in Express 121 was basically a comparison with 8-bit machines. The BBC B's nearest equivalent to Workbench - AMX Desk - takes just ten seconds to reload from disk and less than ten seconds to display the set of icons for the disk I tried, which had files. And without me having to buy an extra book to customise it!

As for the BASIC, why should it be necessary for buyers to spend money on a different one? Obviously most do not, and will be put off the genuine joys of programming for life. It's hardly a defence to say that previous Commodore and Atari BASICS were also awful!

And I thought the whole purpose of high-level languages was to distance the user from the hardware and operating system details. The fact remains that 'real life'

graphics are always measured Y positive upwards, and a language for beginners - which is what the 'B' in BASIC stands for - should do the same.

As far as I am concerned, the operating system is part of the computer, and should not require 90 seconds reloading just because a program calls a file that is not present. And the flickering mess and blank screens come on genuine, unpirated games - including those supplied by Commodore. As I said - indefensible.

John Goldsmith, Bury St Edmunds

I get the feeling that this debate could run and run, if I were foolish enough to allow it. But I'm not, so let's have an end to this particular strand.

H F-W

■ Old and active

just like to let you know (with reference to the letters in Express 116) that I started computing with a ZX81, progressed to a Commodore and now use a C128D. My main interest is typing in programs from magazines and then checking them for errors with my wife - we are both senior citizens, and have two sons and two grandsons who are so keen on computing that we have to keep up to date!

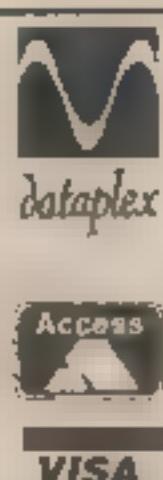
I type in listings with Easy Script and then print out on a 8023P printer which is loaded through an Interpod.

I love seeing youngsters' faces when I start talking to them - they must think 'what does an old man of 79 know about computing?'

J Clewlow, Tipton, West Mids

Good for you Mr Cl! Well, that's about an end to this week's letters page. I'm off to Scotland for the Bank Holiday - hence the single page this week. (I'm driving up in the diesel Fiat Uno, so I'm leaving early for once. Normal service will be resumed next week.)

H F-W



DATAPLEX COMPUTERS LTD.

129 Bath Road, 19 High Street
Slough, Swindon,
Berkshire, Wiltshire
SL1 3UW Tel: 0753 35557 Tel: 0793 488448

AMIGA A500 HARDWARE

Amiga A500 Screen Gems Packs + free disks	£299
Amiga A500 Screen Gems Pack + free disks + 10 extra games pack	£340
Amiga A500 1 Meg Class of 90's	£459
Amiga A500 1 Meg Class of 90's (First Steps)	£459

SPECIAL OFFER

Amiga A500 Screen Gems + 1 meg pack	£325
-------------------------------------	------

While stocks last

Amiga A500 + TV Mod + Mouse + system disk + manuals	only £269
---	-----------

OR

As above + 10 extra games pack	£299
--------------------------------	------

ATARI COMPUTERS

Atari 520STFM discovery pack includes 4 games	£240
Atari 520 STE Turbo Pack includes basic STOS and 7 games + Joystick	£310
Atari 1040 STE extra pack includes ST Words, ST Calc, ST Basic, ST Graphics, Hyper-Paint, STOS, 1st Basic, Print Game	£399

AMIGA/ATARI DRIVES

1 Meg 3.5" internal	£49
1 Meg 3.5" external	£60
1 Meg 5.25" external	£90

ACCESSORIES

512K Ram + clock	£39
Joystick	£10
10 Blank disks in library box	£8
Mouse Mat	£3
Amiga/Atari Mouse	£29

MONITORS

Philips CM8833 MK II Colour Monitor + FREE Lead	£189
SM 1224 (Atari)	£205
SM 124 (Atari)	£99

PRINTERS

Star LC10 Mono	£129
Star LC200 Colour (9 pin)	£180
Star LC24 200 (24 pin)	£210
Star LC24 200 Colour	£245
Star LC24/10	£175
Panasonic KXP1124+ lead	£199
Panasonic KXP1123	£180
Panasonic KXP1624	£329
Citizen 120D +	£120
Citizen Swift 24 + Colour Upgrade	£259
Citizen Swift 9 + Colour Upgrade	£185
Epson LX400	£126
Epson LQ400 (24 pin)	£199
Epson LQ 550	£260

LASER/INKJET PRINTERS

PLEASE CALL FOR PRICES



macintosh

NEW FONT FORMAT

As promised last time, here is a brief run-down of Adobe's new font format, which was officially announced at the Macworld Expo a couple of weeks ago.

The technology is not so much a new font format, more of an extension to existing Type 1 fonts. It will, claims Adobe chairman John Warnock, provide "a new range of dynamic capabilities type users have never had before."

So far, font users have been limited to altering the size of a typeface, or using a program such as Quark XPress or PageMaker to condense or expand the font. Type has been limited to whatever weights the vendor supplies, and similarly with type style - there is only, for example, one italic version of the font available.

Adobe's new technology, called multiple master fonts, is set to change this. With multiple masters, the user will be able to generate a virtually infinite number of variations on a single PostScript font. The user will have control over four different areas: the weight, or 'boldness'; the amount of contraction and expansion; the size; and the style - including such things as the 'italicness' and 'serifness' of the font.

Font designers will have to create at least two masters for each of the four controllable aspects of the font - for example, they'll have to produce a very light and a very bold version, a very condensed and a very expanded version, and so on. Then, the user can pick any point in between those two endpoints, and the software will mathematically generate the correct version of the font.

To visualise the whole thing, think of it as a multi-dimensional array, with an infinite number of elements. Or alternatively, as a square, a cube or a hypercube, depending on the number of controls the user has. Or don't try to visualise it at all. (Probably the best bet.)

The first multiple master fonts should be available in the next few weeks, and are expected to cost about the same as current Type 1 PostScript fonts. Oh, and you'll need Adobe Type Manager (ATM to its friends) and a special INIT supplied by Adobe to make them work.

RUMOURS...

Did you know that The European, Maxwell's continental organ, is totally produced on Macs? It uses Macs for page design, Macs for the illustrations, Macs for creating display ads and Macs for keeping track of the vast piles of unsold copies in newsagents throughout the continent (see Eyes *passim*).

If you have an LC or a IIci and are fed up with the fact that you can't run programs like earlier versions of Excel and Studio/8 because the program says that you don't have a maths coprocessor installed, help may be at hand in the form of a new shareware INIT called SoftwareFPU, by John Neil. This \$10 utility fools the Mac into believing that the coprocessor is installed, so that many more programs will work on it. You'll find it (surprise, surprise) on CIX and from many other shareware distributors.

Apple has cut the prices of the Mac IIci and IIbx. The IIci 5/40 drops £200 to £3,695, while the IIbx 4/80 comes down £595 to £5,695 (excluding VAT). So far there has been no information about the SE/30 in the UK, although in the States the price is dropping by \$1,000 for the 1/40 model and by \$1,700 for the 4/80. Apple has also officially removed the Mac IIx and IIcx from its price lists this week, although again nothing has been heard in the UK - expect an announcement soon.

Apple's court case against Microsoft and Hewlett-Packard in the USA is coming closer to trial, after a federal judge rejected two major

WE MUST BE MAD

Due to massive bulk buying and low cost advertising we can offer you high quality European manufactured disks at these extremely low prices.

3.5" DSDD DISKS 31p INC VAT + LABELS

250+ @29p each, 500+ @ 28p each; 1000+ @ 27p each
ALL DISKS CERTIFIED 100% ERROR FREE

SONY 3.5" 38p

DSDD BULK

100 Capacity Disk Box	3.75	50 Capacity Disk Box	3.25
-----------------------	------	----------------------	------

Mouse Pockets	1.50	Mouse Mat	1.75
---------------	------	-----------	------

Printer Stand	3.75	Amiga Dust Cover	2.50
---------------	------	------------------	------

Posso Box	15.00	Atari Dust Cover	2.50
-----------	-------	------------------	------

Amiga 512K RAM Expansion with clock	32.00
-------------------------------------	-------

Amiga/Atari External Drive	59.95
----------------------------	-------

**THIS MONTHS 200 3.5" DSDD DISKS
SPECIAL OFFER + 2 x 100 CAP BOXES 64.95**

Please add £2.85 p&p/next day £7.50. Cheques/P0s to

PLC COMPUTER SUPPLIES (Dept NCE) TELESALES HOTLINE

11 Meakin Avenue, Clayton 0782 212970



POSTCARD FROM AMERICA

Apple pulled the cover off of its two new printers the other day, the StyleWriter, and the Personal LaserWriter LS. The LS is a snoozer (OK, it's very nice and all that, but you're not going to e-mail your mother), while the StyleWriter is much better.

The StyleWriter is based on the Canon BJ-10e BubbleJet engine, well known outside the Mac world. It's 360dpi (dots per inch) resolution is 20 per cent higher than the normal laser printer. (When they jam, do they become bubble gummed?)

It is a wild looking printer, owing more to kitchen, or beauty appliances, than computer peripherals. I thought it was a small space heater, or a yogurt maker, when I first saw it. The pictures don't do it justice. Many of the new Apple products have curved surface design elements. The front of the StyleWriter is either a wide mouth and lips, or six months pregnant.

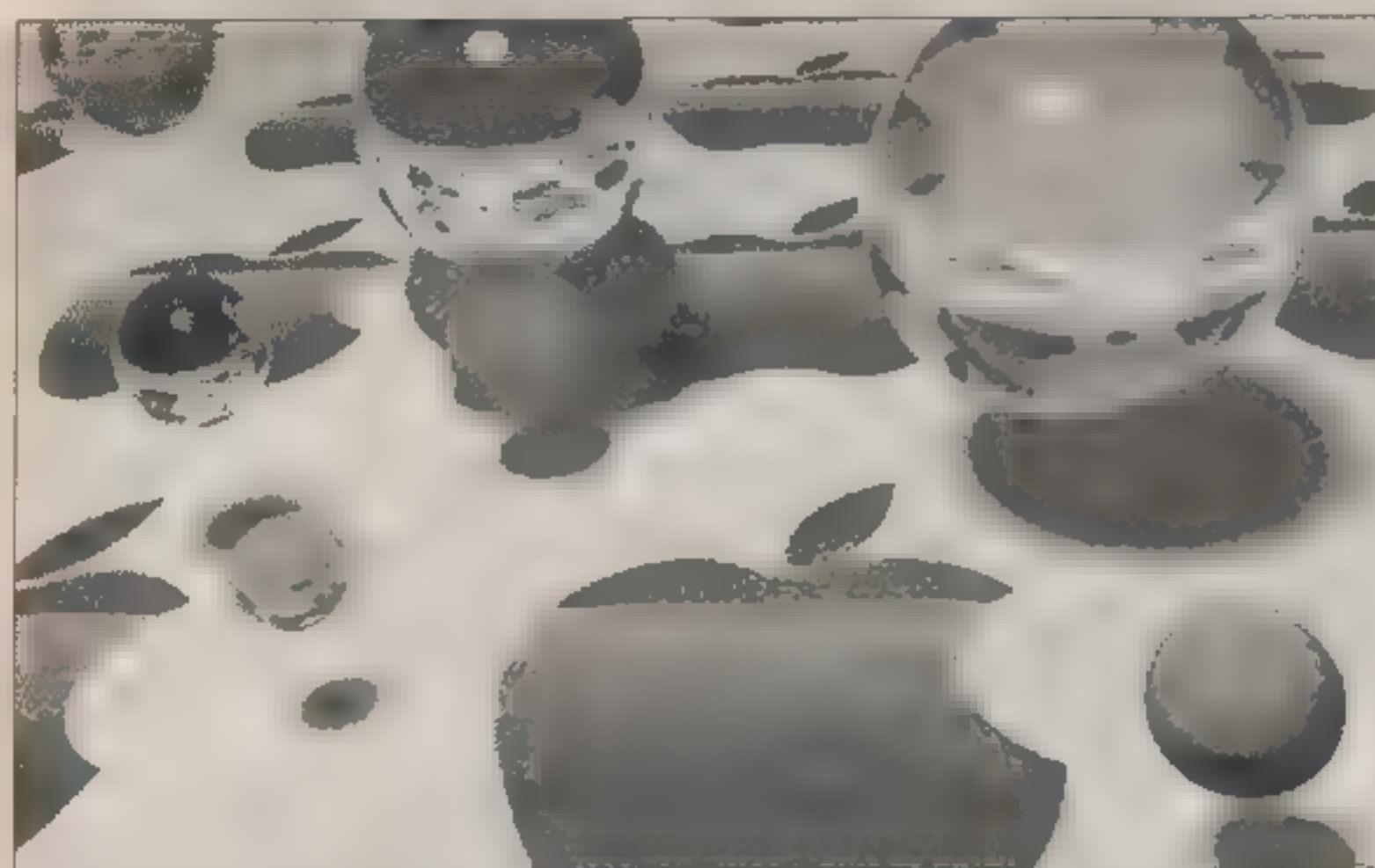
A TrueType INIT comes with package, allowing users running 6.07 System software to run the outline font technology that Apple and Microsoft have been working on. TrueType was supposed to

come out with System 7.0. Since it makes the new brainless printers look great, and it's been ready to go for months, they pushed it out the door early. Apple technical specs say that these fonts can be used on a 1Mb Mac. It can run, but not without an occasional run-in with your applications.

It's painfully slow in printing - by design! InkJet printers spray ink on the page, which must dry before the page can be handled. Some printers drop the page into a holder while they're still a little "wet." Users can smear the ink if they're too eager to see their words in black and white. Apple engineers slowed printing time down to a couple of minutes to allow a page to dry before falling out of the front.

What I wonder about are the StyleWriter's operational temperatures, 15C and 30C. A laser engine works between 10C and 32C. Does the ink start to coagulate at 15C? Perhaps we'll have to buy hot printer bottles to keep the bubbles bubbling through the cold winter nights.

David Morgenstern



• Although Diamond wouldn't co-operate with my screen-grabbing software, this background shot should give you some idea of the quality of the game's graphics.

defence arguments. The case goes back to 1988, when Apple filed a suit claiming that Windows 2.03 and HP's New Wave violated Apple's copyrights. How on earth Apple and Microsoft are able to collaborate on TrueType on the one hand, while fighting each other in court on the other, is beyond me. Still, all's fair in love, war and the fight against PostScript.

Aldus' cheap (£200-ish) page layout program Personal Press still hasn't appeared for review. The company's habit of running ads saying that things are "now shipping" when, in fact, they are only shipping in the States, is reportedly beginning to get on the nerves of some potential purchasers, who are looking to other

suppliers or grey importers to provide them with the goods...

DIAMOND GEEZER

The latest shareware goody to hit the Macs here on the Rebel Alliance floors at Future Towers is a whizzy game called Diamond. It costs \$20, and is like a supercharged version of Breakout (remember that?). But there are enough new twists in Diamond to make it highly addictive - lunch hour resounds to boings, squeaks and sampled Ferris Bueller soundtrack. Available from CIX, and in the usual blah blah blah, if you only get one game for your Mac, get Diamond. Oh, and it won't work on an LC with a 12-inch monitor.

Ian Wrigley



SUPER MONACO GRAND PRIX

What a coincidence - the Formula One Grand Prix season has just started, and US Gold's Super Monaco Grand Prix appears on the Amstrad!

So far, the only version of this racing game I've played is on the Sega Megadrive. Needless to say, there's not much comparison. But it did leave me hoping for a fast, smooth, exciting GP game...

US Gold has gone for 16-colour mode in its conversion to the CPC. Is this wise, we ask ourselves? It certainly gives the Amstrad graphics a lot to do. First impressions of Super Monaco are of a colourful, but blocky game. The sense of speed is good, but the screen update is a bit jerky. It's the sort of game that cannot really be done justice on the CPC.

But first... the plot. Well, there isn't one really, in as much as Grand Prix racing is more or less about jumping in a car and going as fast as you can. There are 16 races all over the world to compete in, and to make it to each one you have to have done well enough in the one before.

You start off driving a qualifying lap. Here you have the track to yourself, and you simply have to do one circuit in the quickest possible time. This governs your grid position for the race itself, which is pretty crucial because on each lap of the race (the total number of laps, plus the one you're on is displayed on-screen) you're given a target position. If you're running at or above

this position, you keep racing. If not, it's game over. Needless to say, as the race goes on, the limits become increasingly tougher.

It acts just like the timed stages in Super Hang On, only with a bit more imagination. Also, it seems to work 'intelligently'. I've been doing really badly sometimes, and the computer has set me a pretty easy target. Yet on the same circuit I've been running around third or fourth and been given a target of eighth or above pretty early on. Of course, in the heat of the action, you've rarely got time to study the instruments...

Despite the fact that the hardware is struggling Super Monaco Grand Prix really is exciting. Once you become used to the blocky graphics and juddery updates, you start experiencing a sense of speed and a feel for the game. And when you look more closely there are plenty of impressive features. The backgrounds are different for each circuit, the tracks have hills and dips (and Monaco itself has its famous tunnel), the other cars are well drawn and you have a big fat mirror in the top of the screen to see just what they're up to (always assuming you're in front).

Considering what's been done, Super Monaco Grand Prix's graphics are very good indeed. Sound is good too, with an upbeat title tune and realistic engine sounds. I'm not quite so sure about the squealing tyres on the corners, but there we are.

And the game is very well-judged in

PICTUREWARE®

For The
Commodore Amiga IS HERE!!!

©N.J.N. Williams 1991

ONLY AVAILABLE FROM
NIK WILLIAMS
BROADCAST
COMPUTER
PICTURE
LIBRARY
0792 470503

Unbelievable quality
Amazing value!
Incredible fun!!
Available in
4096 Colour HAM
&
32 Colour IFF
Please specify
when ordering
FOR FULL DETAILS
PLEASE SEND SAE

One disk £4.99
Two+ disks £4.50 each
Up to five disks £1P&P
Six+ disks post free

Give your Paint Package a treat! A stunning photograph to work from! Put life into your DTP/DTV: wonder at the quality, let your imagination run wild!!! See before you buy!!! Catalogue disk No.1 is 90p & 50p P&P and forms part of our 1 disk demo set which is £3 post paid. Please specify IFF or HAM demonstration disks. Single demo disks also 90p & 50p P&P.

On Pictureware® Catalogue Disk One Are:-
People Disks 1&2
Children Disks 1&2
African Famine Disks 1&2
The Nude Disks 1&2
Edwardian Photo's Disks 1&2
Art In Photography Disks 1&2

During Pictureware's development we've created pictures in sizes and formats. We're providing them for your fun and entertainment on SPECIALLY PRE-FORMATTED FLOPPIES. £9 for 10 disks, post free! No guarantees on this exceptional offer, if you like the pictures use them, don't delete them (much quicker than a disk format), and use the disks as blank floppies!!!

FREE OFFER!!! With every order of six Pictureware® disks we are giving away FIVE FREE SPECIALLY PRE-FORMATTED FLOPPIES!!!! (Worth 90p each!) (Offer closes end of June 1991)

"YOUR GRAPHICS WILL NEVER BE THE SAME!!!"

Orders by post to:- Nik Williams Broadcast, Aspect House,
21 Brynmill Crescent, Brynmill, Swansea, SA2 0AL.
Please allow 21-28 days for delivery. 'phone for urgent orders.

24Hr Credit Card Phone/FAX Hotline 0792 645946
(When ordering by telephone please wait for FAX tone to finish,
at which point you'll be connected to our telephone system.)

PRINTER RIBBONS

All of our ribbons are GENUINE manufacturer ribbons - NO copies!

1 x LC10 Black Ribbon	£3.50
5 x LC10 Black Ribbons	£16.95
1 x LC10 Colour Ribbon	£5.20
5 x LC10 Colour Ribbons	£24.95
1 x LC24/10 Ribbon	£4.75
5 x LC24/10 Ribbons	£22.00
1 x LC200 Colour Ribbon	£10.00
5 x LC200 Colour Ribbons	£50.00
1 x LC24-200 Mono Long Life	£7.50
5 x LC24-200 Mono Long Life	£37.50
1 x LC24-200 Colour Ribbon	£11.00
5 x LC24-200 Colour Ribbons	£55.00
Swift 24 Mono Ribbons (each)	£5.00
Swift 24 Colour Ribbons (each)	£13.95

ATARI LYNX

Lynx Games Machine - (with California Games)	£117.50
Lynx Games Machine - (no free software)	£92.00
Lynx Carry Case	£14.99
Lynx Sun Visor	£6.99
Lynx Car Adaptor	£8.99
Blue Lightning	£19.50
Chips Challenge	£19.95
Electrocop	£19.50
Gates of Zendocon	£19.50
Xenophobe	£19.50
Robo Squash	£19.95
Road Blasters	£19.50
Rampage	£19.95
Ms Pacman	£19.50
Shanghai	£19.50
Zarlor Mercenary	£19.50
Gauntlet 3	£19.95
Rygar	£22.00
Stime World	£19.95
Klax	£19.50
Paperboy	£19.95

Atari Portfolio

SPECIAL CLEARANCE SALE EXCLUSIVE TO N.C.E. READERS - VERY LIMITED STOCKS	Atari Portfolio Pocket PC	£169.00
	Portfolio 128K Memory Card	£119.99
	Portfolio 64K Memory Card	£84.95
	Portfolio 32K Memory Card	£44.99
	Portfolio Mains Power Adaptor	£11.99
	Portfolio Parallel Interface	£38.00
	Portfolio Serial Interface	£54.95
	Portfolio Super Memory Expander	£165.00
	Portfolio Card Drive	£59.99
	Finance Card software	£44.99
	Utilities Card software	£44.99
	PC Application software	£44.99

BLANK DISKS

All of our blank disks are guaranteed and supplied with labels. Our 3.5" unbranded disks are of the highest quality double sided media. All Sony Branded disks are boxed and supplied with labels. All disk prices include vat and delivery. Ring for prices on larger quantities.

QUANTITY	10	20	30	50	100
UNBRANDED 3.5" DS/DD	5.99	10.99	15.99	25.99	44.99
SONY BRANDED 3.5" 2DD	9.50	18.50	26.50	42.50	80.50
UNBRANDED 3.5" HD	14.95	27.95	39.95	59.95	114.95
SONY BRANDED 3.5" HDD	26.50	50.50	74.50	115.50	227.50
UNBRANDED 5.25" 360K	3.25	6.25	9.25	14.95	28.25
SONY BRANDED 5.25" 2D	7.95	14.95	21.95	34.95	68.95
SONY BRANDED 5.25" HDD	12.99	23.99	34.99	54.99	99.99

ATARI ST / AMIGA STEREO COLOUR MONITOR

The Philips 8833 MkII is the perfect colour monitor for all ST and Amiga owners. With its high quality picture and stereo sound it really makes the STE or Amiga perform to its full. 12 months on-site warranty FREE!

£ 245.00

including vat and delivery

Supplied with 1 cable free of charge. Options are:-
Atari STE Stereo cable or Atari STFM cable or Amiga stereo cable

PRINTERS

All of our printers come with a parallel cable to suit Atari ST, Amiga and all standard PC etc (other cables available at extra cost - ask for details). All printers carry a full 12 months warranty. We only sell genuine UK stock - we do not offer inferior 'grey imports'.



FREE CABLE WITH ALL PRINTERS

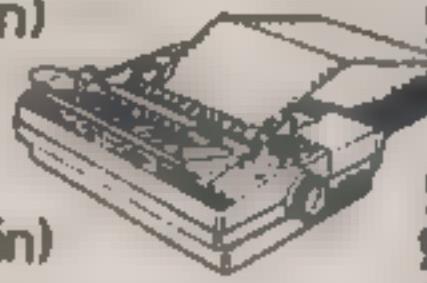
Star LC10 Mono (9-pin)	£155.00
Star LC200 Colour (9-pin)	£230.00
Star LC24-10 Mono (24-pin)	£210.00
Star LC24-15 Mono 15" (24-pin)	£399.00
Star LC24-200 Mono (24-pin)	£265.00
Star LC24-200 Colour (24-pin)	£295.00
Star XB24-10 Mono (24-pin)	£469.00
Star XB24-15 Mono 15" (24-pin)	£599.00

Panasonic

Panasonic KXP1124 (24-pin)	£249.00
Panasonic KXP1624 15" (24-pin)	£389.00
Hewlett Packard Deskjet 500	£499.00
Citizen 124D (24-pin) + s/feed	£225.00
Citizen Swift 24 (24-pin)	£289.00
Canon BJ10E Portable Bubble Jet	£339.00

PRINTER ACCESSORIES

Swift 24 Colour Kit	£34.95
Star XB Colour Kit	£34.95



Deskjet - FX85 Mod	£59.00
Deskjet - Ink Cart	£17.95

ATARI ST ACCESSORIES

SM124 Mono Monitor	£99.99
Megafile 30 Hard Disk	£389.00
Megafile 60 Hard Disk	£529.95
Roetc 1MB External Drive	£69.00
Golden Image Handy Scanner	£195.00
Forget-Me-Clock II Card	£24.95
ST Monitor Switch Box	£14.95
STE Stereo scart lead	£12.99
STFM standard scart lead	£12.95
STE MKI 8833 lead	£12.99
STFM MKI 8833 lead	£9.99
Joystick/Mouse extension lead	£4.75
Replacement Mouse lead	£3.75
Standard Parallel Lead	£5.95
Mouse Mat	£3.50
2 x coiled Midi leads	£8.95
14 Pin Din Plug (ST disk drive)	£22.50
14 Pin Din Socket (ST disk drive)	£29.50
13 Pin Din Plug (ST monitor)	£1.95

ST MIDI SOFTWARE

Sequencer One (ST)	£69.95
Dr.T Tiger Cub (ST)	£59.00
C-Lab Notator V3.0	£11.95
C-Lab Notator Alpha V1.0	£11.95
C-Lab Creator V3.0	£11.95
C-Lab Aura ★NEW★	£11.95
Steinberg Cubase V2.0	£11.95
Steinberg Cubase ★LOW PRICE★	£11.95
Steinberg Voice Editors	£11.95



ST SOFTWARE PACKS

DISCOVERY SOFTWARE	£19.95
Contents : STOS, First Basic, NeoChrome 4 games	
TURBO SOFTWARE (STE ONLY)	£24.99
Contents : STOS, First Basic, Hyper Paint II, Music Maker II 8 games	
TENSTAR PACK SOFTWARE	£29.95
Contents : Asterix, Chess Player 2150, Driving Force, Live Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeek Trivial Pursuit II	
BUSINESS PACK SOFTWARE	£59.99
Contents : K-Word 2, K-Spell, K-Spread, K-Data and Metacomo Basic	

ACCESSIONS

MOUSE MATS

High quality neoprene soft mouse mats.

£ 3.50

PRINTER STANDS

2 piece plastic printer stand with paper space underneath. (fits virtually any printer)

£9.50

DISK BOXES

--

ATARI 520ST

ALL ATARI STE/STFM PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. ALL STE MACHINES ARE CHECKED PRIOR TO DESPATCH. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES. ALL OF OUR STE COMPUTERS HAVE THE "PLUG-IN" RAM SOCKETS AND DO NOT REQUIRE A SOLDERED IN RAM UPGRADE. ALL OF OUR STE COMPUTERS ALSO HAVE THE NEW DMA CHIP SET FITTED ALLOWING TROUBLE FREE OPERATION WITH ATARI HARD DISK DRIVES. ALL STE MACHINES COME WITH THE NEW CONTROL PANEL SOFTWARE.

512k **1mb** **2mb** **4mb**

£319.00 **£339.00** **£379.00** **£459.00**

£339.00 **£359.00** **£399.00** **£479.00**

£359.00 **£379.00** **£419.00** **£499.00**

£339.00 **£359.00** **£399.00** **£479.00**

£235.00

£245.00

£269.00

£289.00

STE RAM KITS

DIY 1 KIT - 520STE to 1MB

(2 x 256K cards) £34.99

DIY 2 KIT - 520/1040 to 2MB

(2 x 1MB cards) £99.00

DIY 4 KIT - 520/1040 to 4MB

(4 x 1MB cards) £179.00

ALL RAM KITS ARE SUPPLIED WITH INSTRUCTIONS. PLEASE CHECK YOUR STE CONFIGURATION BEFORE ORDERING

AMIGA A500

AMIGA A500 BASE PACK

A500 computer, mouse, tv modulator, manuals, Workbench, etc supplied 'bare' with no games software

£309.00

ALL AMIGA PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS ARE UK STOCK AND ARE COVERED BY A FULL 12 MONTH WARRANTY.

512K Ram Upgrade + clock	£29.95
A590 20Mb Hard Disk drive	£274.95
A590 1Mb Ram Upgrade	£45.00
Astra Pack software	£29.95
Roctec external disk drive	£65.00
Stereo Hi Fi speaker kit	£36.95
Golden Image Handy Scanner	£195.00
Amiga Stereo Scart Lead	£9.99
VIDI Amiga Video Digitiser	£99.99
Master Sound 1	£34.95
Photon Paint VI	£9.95

AMIGA A500 1MB RAM ASTRA PACK

NEW! Yet another amazing new deal exclusive to Best Prices ... With our new AMIGA A500 1MB ASTRA PACK you get : Amiga A500 computer, 512K Ram expansion with clock and battery back-up, mouse, tv modulator, manuals, Workbench + Extras disks, plus the ASTRA 10 games pack including the following games : Datastorm, Dungeon Quest, E Motion, Grand Monster Slam, Kid Gloves, RVF Honda, Shuffle Puck Cafe, Microprose Soccer and Tower of Babel all this for only

£359.00

AMIGA A1500

AMIGA A1500 PACK

A1500 1Mb RAM (expandable to 9Mb) computer with 2 x 3.5" 880k disk drives built in, mouse and the following software : Platinum Works, Deluxe Paint 3, Populous, Simm City, Battle Chess, Their Finest Hour (Battle of Britain) and 2 books : "The A-Z of Computer Jargon" and "Getting the most from your Amiga".

£650.00

fully inclusive of VAT and delivery

YOU ARE NOT REQUIRED TO TRADE IN YOUR OLD A500

• ST GAMES LESS THAN £3.00 EACH ?

Asterix, Chess, Players 2150, Driving Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeek & Trivial Pursuit.

All of the above games are available on the Tenstar Software pack (only £29.95). That's less than £3 each!

(requires double sided internal disk drive) N.B. These games are not available separately.

BEST PRICES MAIL ORDER

(DEPT NCE), UNIT A, GRAFTON PLACE,
WORTHING, WEST SUSSEX. BN11 1QX

(0903) 700714

TELESALES 10am till 12 midnight



Telesales : Mon to Sat Returns, Technical & Queries : Mon to Fri (10am till 6pm)

All prices include VAT and free UK delivery unless otherwise stated. All prices / specifications / special offers are subject to change without notice. Goods usually despatched same day as cleared payment is received. Personal cheque clearance takes 7 days.

Please make cheques/P.O.s out to BEST PRICES Mail order only. No callers. Thank You.

ADD £6.50 INC VAT FOR NEXT WORKING DAY UK DELIVERY, ADD £32.50 INC FOR SATURDAY UK DELIVERY

RAVEN GRAPHICS SOFTWARE

FAST SERVICE

AMIGA

688 ATTACK SUB.....	17.50	JACK NICKLAUS GOLF.....	17.50
ATOMIC ROBO-KID.....	17.50	JAMES POND.....	17.50
BACK TO THE FUTURE 2.....	17.50	KICK OFF 2.....	14.50
BATTLE MASTER.....	20.50	KICK OFF 2 (1 MEG).....	17.50
BATTLE COMMAND.....	17.50	KILLING GAME SHOW.....	17.50
BATTLE OF BRITAIN.....	20.99	LEMMINGS.....	17.50
BETRAYAL.....	20.50	LOTUS ESPRIT TURBO.....	17.50
BLUE MAX.....	20.50	M.I. TANK PLATOON.....	21.99
B.S.S. JANE SEYMOUR.....	17.50	MEAN STREETS.....	17.50
BUCK ROGERS.....	21.75	MIDWINTER.....	20.99
BUDOKAN.....	17.50	MIDNIGHT RESISTANCE.....	17.50
CAPTIVE.....	17.50	MURDER.....	17.50
CADAVER.....	17.50	M.U.D.S.....	17.50
CHAOS STRIKES BACK (1 MEG).....	17.50	NIGHTBREED (ACTION).....	17.50
CHASE H.Q. 2.....	17.50	NIGHTBREED (MOVIE).....	17.50
CORPORATION.....	17.50	OPERATION STEALTH.....	17.50
DAMOCLES.....	17.50	POPULOUS.....	17.50
DAYS OF THUNDER.....	17.50	POWERMONGER.....	20.50
DUNGEON MASTER (1 MEG).....	17.50	RICK DANGEROUS 2.....	17.50
ELVIRA.....	20.99	ROBOCOP 2.....	17.50
F19 STEALTH FIGHTER.....	20.99	RORKES DRIFT.....	17.50
F29 RETALIATOR.....	17.50	SIM CITY.....	20.50
FUTURE BASKETBALL.....	17.50	SPEEDBALL 2.....	17.50
FUTURE WARS.....	17.50	SPY WHO LOVED ME.....	14.50
GAZZA 2.....	17.50	SUPERCARS 2.....	17.50
GOLDEN AXE.....	17.50	SUPREMACY.....	20.50
GREMLINS 2.....	17.50	TEAM YANKEE.....	20.50
HARD DRIVIN' 2.....	17.50	TOTAL RECALL.....	17.50
HORROR ZOMBIES.....	17.50	ULTIMA 5.....	20.50
IMMORTAL (1 MEG).....	17.50	WINGS (1 MEG).....	20.50
INDIANAPOLIS 500.....	17.50		

OTHER GAMES AVAILABLE PLEASE CALL

1 MEG UPGRADES £30.99
WITH CLOCK £35.99

COMPILATIONS	
HOLLYWOOD COLLECTION.....	20.50
POWER PACK.....	17.50
T.N.T.....	20.50
TRIAD 3.....	20.50
WHEELS OF FIRE.....	20.50

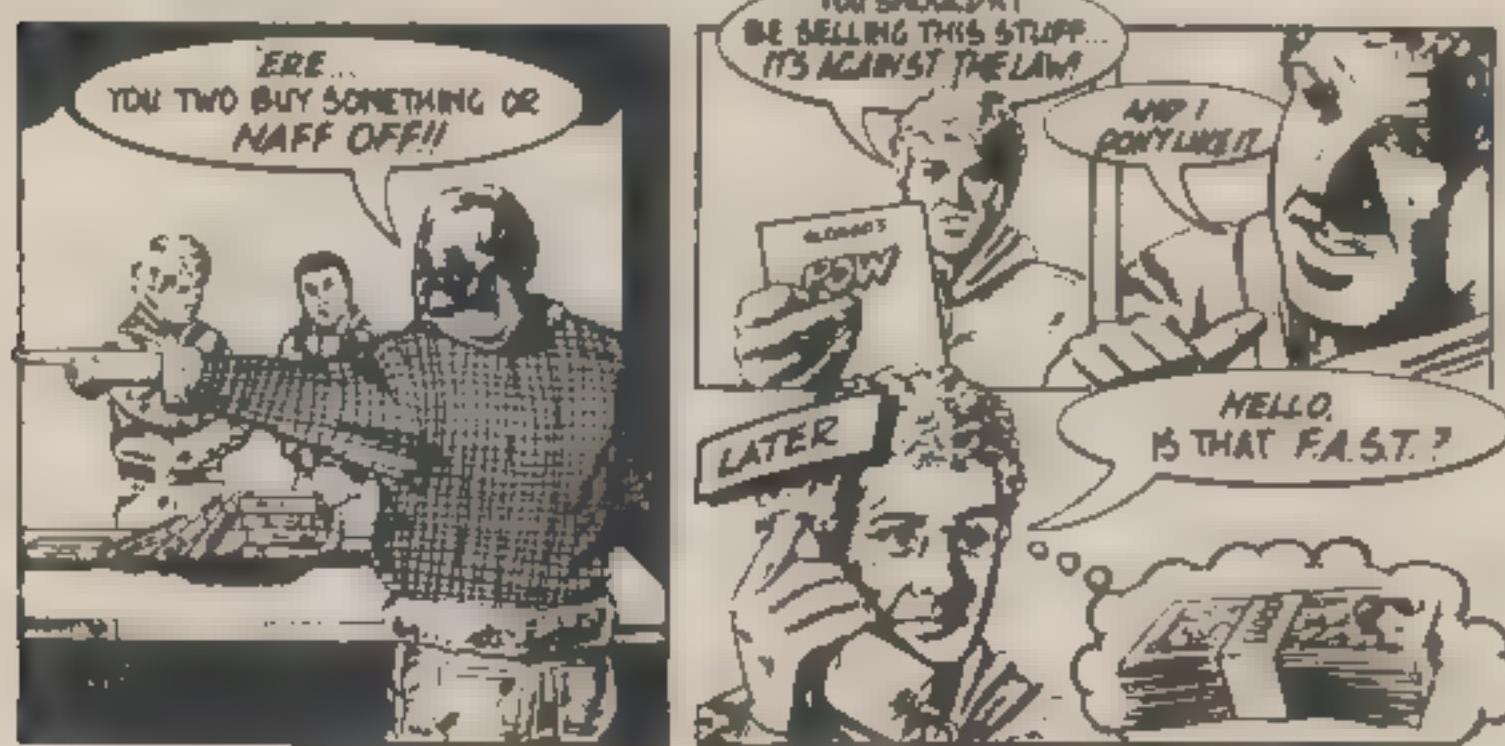
All games available for the Amiga and Atari ST.
Games in stock will be despatched daily by 1st class post.

Please add £1 for Post and Packing (inc. VAT)

Please make all cheques & postal orders payable to:

**RAVEN GRAPHICS, 100 RAVENHEAD ROAD, ST.
HELENS, MERSEYSIDE WA10 3LR. TEL: 0744 451490**

Overseas orders please add £1.50 per item.



\$1000 REWARD

THIS CAMPAIGN IS ORGANISED BY
ELSPA
HOME USE SOFTWARE ASSOCIATION

ANY INFORMATION ON PIRACY SHOULD
BE PASSED TO F.A.S.T. (THE FEDERATION
AGAINST SOFTWARE THEFT)

TELEPHONE 0386 833501 IS THEFT

FOR INFORMATION
LEADING TO A
PROSECUTION
& CONVICTION



• Super Monaco Grand Prix: the graphics might be a bit over ambitious but it's still good.

terms of difficulty, too. You'd have to be a complete clot not to get round a lap or two the first time you play, but it's going to take a long time (and a lot of circuit knowledge) to progress more than a couple of races into a season.

US Gold is heavily into arcade conversions, and with arcade hardware becoming ever more powerful, it's not surprising that the Amstrad struggles (*Line of Fire* was awful). And do we want all these coin-op licences anyway? Well, we do want *Super Monaco Grand Prix*. It's graphically ambitious – almost too ambitious – but US Gold has pulled it off. It's a very, very good game.

DTP ON THE 464

Last week I was going on about desktop publishing and the demise of Database's *Stop Press* (remaining stocks have been sold off to the trade). Well, 464 owners will be familiar with those "I can't get no software" blues anyway, because that machine has never been taken seriously by, er, serious publishers, especially in the DTP field.

All that could change, though, thanks to Bit-7 Computer Software in Kettering. *Page Setter 64* is a program supplied both on tape and disk, and will work on an unexpanded 64K machine.

It consists of three basic modules – a text editor, graphics editor and page layout section. You load all three separately. The text editor's a bit basic, and the manual won't win any prizes for clarity. But you do get a choice of fonts.

And when you come to design your page you can insert graphics, flow text around them and basically do just about all of the things you could with a package costing much more. Output quality is excellent.

Best news of all is the price – just £10 on tape or disk. The address to write to is: Bit-7 Computer Software, 221 Rockingham Road, Kettering, Northants NN16 9JB.

DYNAMIC IN A FLAP

Remember that golden oldie *Phoenix*? Spanish software house Dynamic certainly does. Indeed, it's producing an new, up-to-date version called (wait for it) *Mega Phoenix*.

I have no details on the gameplay ■ the moment (what gameplay?), but I do have in front of me a screenshot, which seems to consist almost entirely of molten, leaden death, swarming enemy vessels and a ship the size of the Ark Royal (remember that?). More news when I get it.

CHEATS CORNER

Just space for a couple of keypress cheats... in *Hong Kong Phooey*, to get infinite energy, call up the options table and hold down the keys T, H, U, G, I simultaneously. And for infinite lives in *Blazing Thunder*, hold down the keys S, L, I, M, B on the options table.

Both cheats are from Stephen Troup of Kings Lynn. Well done Stephen! Rod Lawton

Amiga

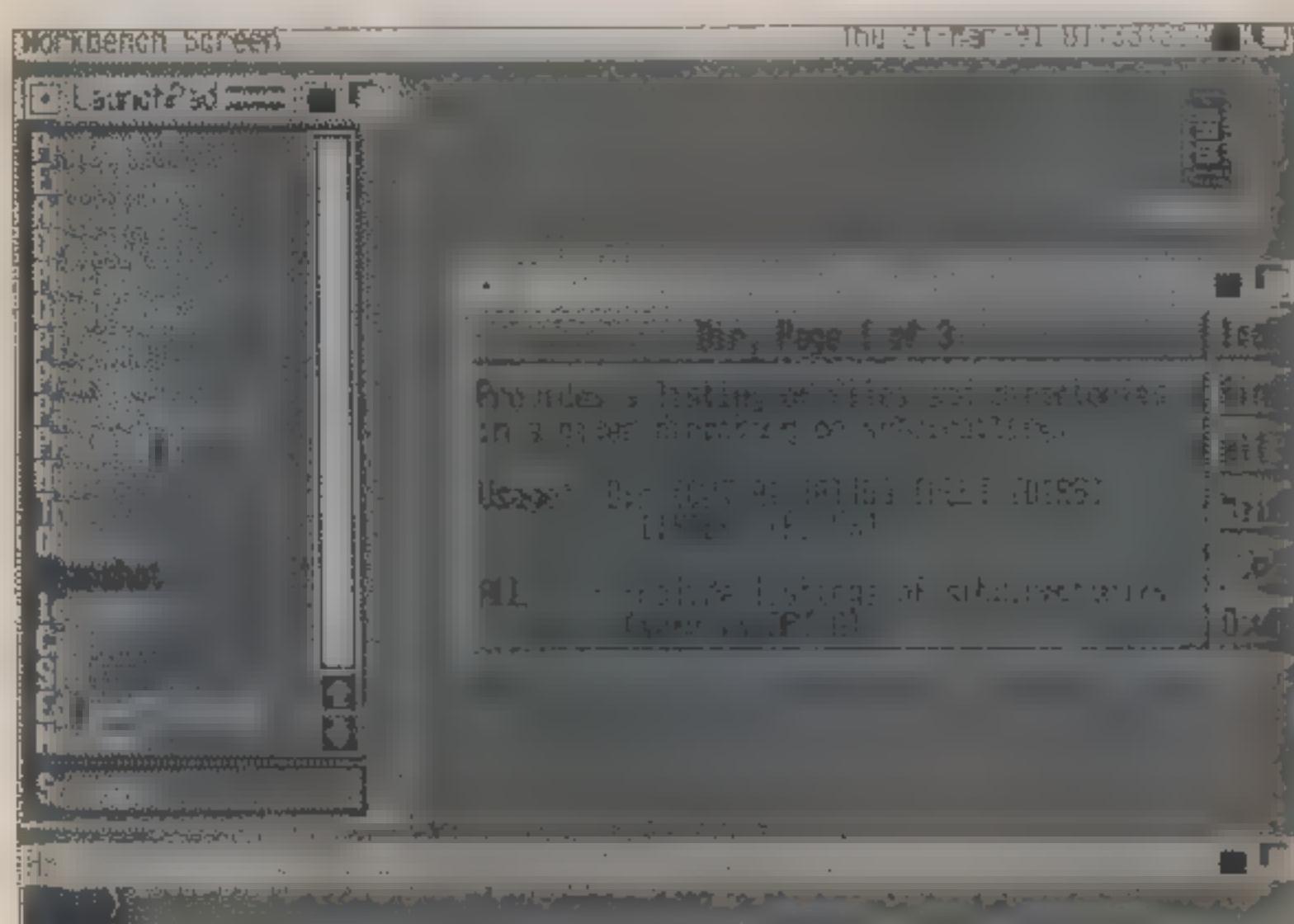
HYPHERHELPERS BLASTOFF!

As reported in Express a few weeks back, Checkmate Digital has taken on the distribution of INOVAtronics' range of Amiga productivity software. Thanks to Steve Jones at Checkmate, I've been playing around with a couple of the company's products, mainly *HyperHelpers* and *CanDo*.

I'll be covering both these products ■ depth in a future issue of Express, but I must just mention one aspect of the *HyperHelpers* package which I have found particularly useful.

As reported, *HyperHelpers* isn't just a single program, it's a collection of useful utilities to enhance the usability of the Amiga. The one that I've found particularly useful is *LaunchPad*, a handy menu-like program that is an absolute must for anyone who owns a hard disk.

LaunchPad allows you to build up a menu containing frequently used programs on your hard disk. This menu, which sits in ■ small window on your workbench screen, allows you to load any program on to your hard disk with a



• HyperHelpers: makes the Amiga a far friendlier machine to work with.

double click of your mouse button instead of searching through the directory structure of your hard disk to find the program's icon.

OK, it doesn't sound like a particularly earth-shattering program, but what's great about LaunchPad is that when invoked from your StartUp Sequence, you can have immediate access to any program without having to click on a single icon. You can even run CLI commands from the workbench, which is really useful.

I now have LaunchPad installed permanently on my hard disk; as soon as my machine boots, I can load Excellence! 2.0 (which I use to write my copy), DPaint 3, GBRoute, ProPage 2.0 or just about anything else simply by clicking on its name in the LaunchPad menu.

HyperHelpers will retail for £50. Expect a full review soon, but in the meantime you can find out more by phoning Checkmate on 071 923 0658.

TFMX UPGRADED

Digital Distribution International (0753 686000) has released further details of its soon to be released music creation system, TFMX II.

Programmed by German software publisher Demonware, the new program boasts many new features to further enhance what is generally regarded as one of the best Amiga sound chip composers available. Here's what it has to offer:

MIDI support – The new editor is now fully MIDI compatible. With the right interface connected to your Amiga, you can now enter performance data directly from your MIDI keyboard. External MIDI synchronisation allows an Amiga running TFMX to be used as a dedicated sound module.

Pattern editor – The previous release of TFMX was criticised for being rather difficult to use, but Demonware has corrected this with the inclusion of an all-new Pattern editor which adds graphical sequence editing to the system. Unlike most programs of the type, TFMX has an editor based on a conventional score display.

Sound Synthesis – Samples eat memory, lots of memory, which is why Demonware has built in a new Sound Synthesis module that allows you to create sounds using Paula's internal registers. These have the advantage of using substantially less memory than conventional samples, while having a trendy 'acid-like' analogue feel to them.

Sampler – Now you can grab and edit

samples from directly within TFMX using its built-in sample editor. TFMX provides direct support for any sampler that connects to the Amiga's parallel port. **Tool editor** – Details are a little sketchy about this one, but it seems that TFMX II will allow you to create your own editing tools using a tool editor utility. That's all I can tell you. **Other features** – Full search and replace (within a music editor?), a PAL-size screen, more macro commands plus much more besides.

MED GOES COMMERCIAL

On the subject of music software, fans of the much acclaimed PD music composer MED will be pleased to learn that not only is there a new version available (review next week), but MED programmer Teijo Kinnunen has announced the impending commercial release of his composition system.

According to Teijo, the new program looks set to give heavyweight music packages like Music-X a run for their money.

The new program has one major feature, which has a name that virtually explains itself; put simply, OctoMed will allow you to compose tunes on your Amiga using a maximum of eight different samples simultaneously. OK, Oktalyser has beaten OctoMed to it, but OctoMed apparently achieves this impressive feat without loss of sound quality (something that Oktalyser most certainly doesn't do).

Other new features include powerful Music-X-like sequence editing, using a sort of 'semi-stave' approach. At the time of going to press, this was all that was known about OctoMed, but I'll pass on more details as soon as they become available.

The program should be available in about two months, priced at about £50-£75. For further information, contact the exclusive UK distributor AmigaNuts United on 0703 785680.

MORE FLIPPIN' MUSIC...

Crikey! The Amiga music scene seems to be a hive of activity this week! Not only have TFMX and MED been upgraded, but there's even news surrounding Microllusions' Amiga industry standard MIDI sequencer system, Music-X.

Unfortunately, the news is far from being good. According to a source close to Music-X programmer David Joiner, Music-X 2.0 has been put on ice 'indefinitely' while Joiner works on a range of projects for Commodore's

HIGH QUALITY DISKETTES

PIN NUMBERED QUALITY DISKETTES 100% CERTIFIED AND GUARANTEED 100% ERROR FREE. MANUFACTURED AND QUALITY ASSURED BY AN INTERNATIONAL BRAND NAME

**3 1/2 DS COLOURED
2DD
34p EACH**

3 1/2 DS DD 31p EACH

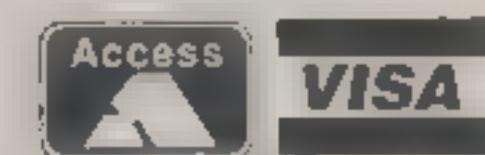
**3 1/2 DS HD 60p
5 1/4 DS DD 25p
5 1/4 DS HD 20p 37p**

**PLASTIC EA STORAGE BOXES
3 1/2 LIBRARY 78P
5 1/4 CASES**

**EURODATA
12A QUAKERS YARD
ADAM AND EVE ST
MARKET
HARBOUROUGH
LEIC LE16 7LT
TEL: 0858 433992**

**RING FOR
MEMOREX
BRANDED PRICES**

**LIFETIME GUARANTEE . ALL PRICES INCLUDE LABELS & ENVELOPES.
ALL PRICES EXCLUDE VAT.
ORDER NOW WITH POSTAL ORDER OR CHEQUE MADE PAYABLE TO EURODATA,
OR TELEPHONE YOUR ORDER USING
MASTERCARD & VISA. SUBJECT TO
AVAILABILITY
ADD £3.20 P&P**



LOWEST PRICES FOR HIGHEST QUALITY

Supra Modems

Modems from £55

Supra 2400 (V22bis) £125

Supra Plus (9600 baud) £220

Used modems at bargain prices.

Ideal for Ataris, Amigas & PCs

All modems are auto-dial, auto answer Hayes compatible.

All Supra modems are guaranteed for four years.

Open till 8pm

081-566-3639

Open till 8pm

**SUPPLY SOLUTIONS, PO BOX 2136,
LONDON, W13 8QJ**

BLANK DISKS

GUARANTEED 100% ERROR FREE

VERBATIM BULK

3.5" DSDD UNBRANDED.....33p
 3.5" DSHD UNBRANDED.....58p
 5.25" DSDD UNBRANDED.....25p
 5.25" DSHD UNBRANDED.....43p

VERBATIM BRANDED

3.5" DSDD BRANDED.....65p
 3.5" DSHD BRANDED.....£1.25
 5.25" DSDD BRANDED.....48p
 5.25" DSHD BRANDED.....83p

All goods are subject to availability

All prices include V.A.T. / Please add £3.50 for P&P
 CHEQUES & P.O. PAYABLE TO

PDA ASSOCIATES

FREEPOST (RCC 2044), Haywards Heath, W Sussex, RH16 3ZA

TELEPHONE 0444 415355

FAX 0444 415356

BILL'S GONE BANANAS!!!

PC'S AT CRAZY MONEY LOOK FOR YOURSELF

286AT 40Mb hard disk 28Ms '0' wait state
 1MB RAM 1.44 or 1.2Mb floppies + mouse

VGA colour as standard 102 keyboard

FULL ONE YEAR RETURN TO BASE WARRANTY

286AT as aboveonly £850.00

386SX Spec as aboveonly £1020.00

386SX 106 MB HDiskonly £1250.00

Special offer: 386 25 2Meg Ram with

above Spec all inclusive price£1375.00

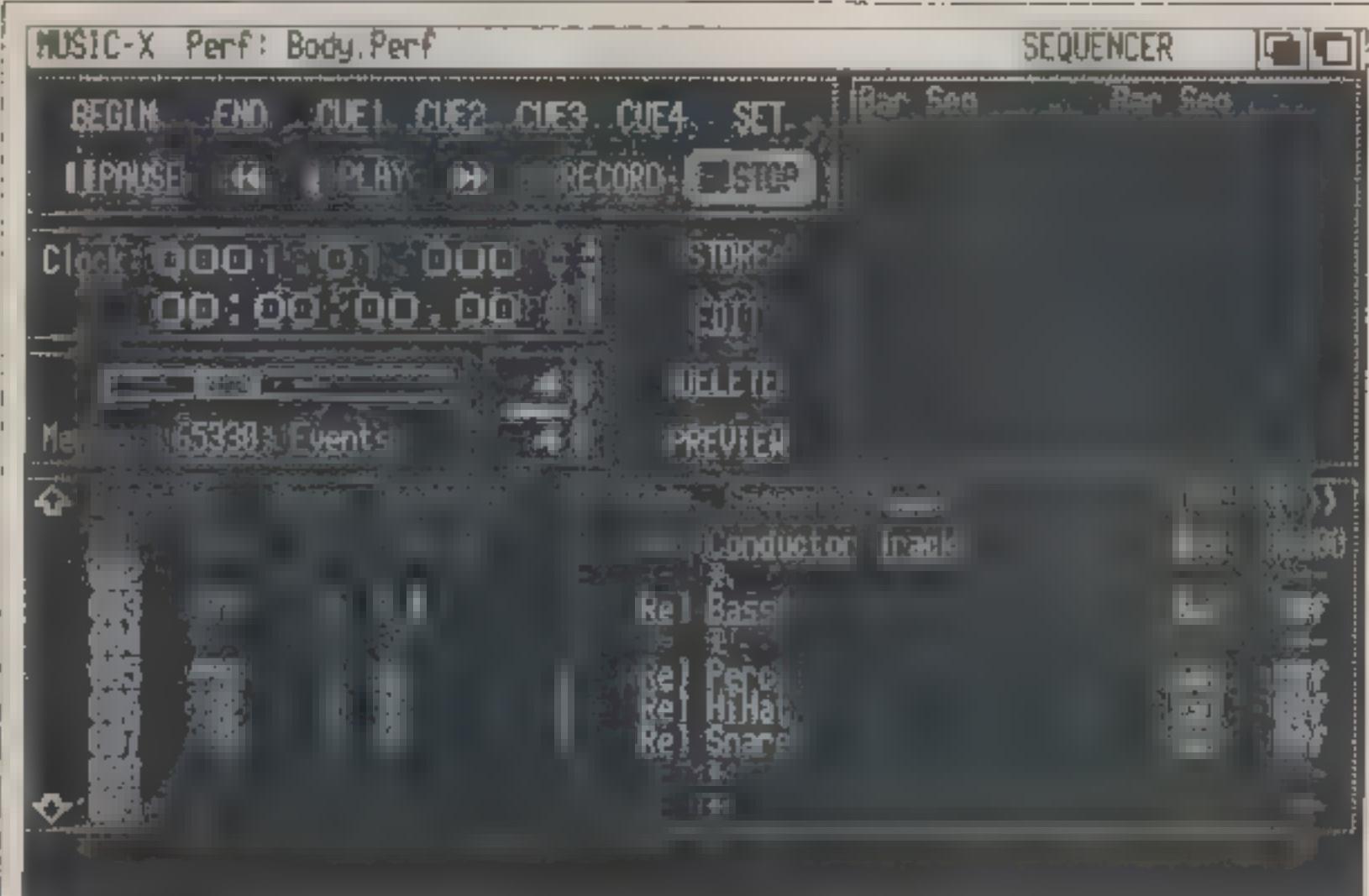
HARD DISKS

SIZE	TYPE	SPEED	PRICE
40Mb	IDE	28M/s	£160.00
106Mb	IDE	18M/s	£342.00
200Mb	IDE	16M/s	£495.00
180Mb	SCSI	18M/s	£569.00
VGA Monitors 800 x 600	FROM	£195.00	
VGA Monitors 1024 x 768	FROM	£235.00	
VGA Mono	FROM	£85.00	
HD Controller Cards	FROM	£43.00	
Mice	FROM	£26.00	

(ALL PRICES INCLUDE VAT & EXCLUDE DELIVERY)

*Just lift the phone and ring Bill Russell on
 081-543 0217 0491 613931*

*Giltlink Ltd, enquiries by post to:
 Scotts House, Cuxham Rd, Watlington,
 Oxon OX9 5JW*



• Music-X: Has version 2 finally bitten the dust?

soon to be released CD-based Amiga machine, the CDTV.

The news isn't all bad for Music-X owners, however. Microillusions has announced the development of several add-on modules which will extend the power of its acclaimed sequencing system. They are as follows:

Deflam – How many times have you recorded a complex sequence into Music-X live, only to find loads of extra notes that you accidentally touched with your hands zipped around the keyboard? With the new Deflam module, any notes shorter than a specified length can be automatically removed.

Scatter – Does your music sound rigid and lacking real feeling? If so, then Music-X's new Scatter tool is for you. Scatter attempts to inject 'feel' into your music (also called 'humanising') by adjusting certain aspects of note

parameters (adding errors, basically!).

PrintEvent – Guess what this does!

Yep, you've guessed it. PrintEvent allows you to get a printout of the sequence data displayed within the Music-X Event Editor (the one that displays your sequences as a list of numbers).

Music-X is also starting to attract interest from third party developers. Music specialist Monumental Music has announced that it is to release a number of Music-X compatible protocols for popular synths. These are very much 'still in development', but Monumental promises me that they will cover such synths as the Yamaha PSR range of home synths, the Casio Tonebank and CZ range, the Roland D-series LA synths, Kawai, Korg M1, T3 and the Yamaha SY series.

Jason Holborn

Archimedes

FACING FACTS

First off this week, two new companies seem keen on raising the summit of the Archimedes outline font mountain: well-known Longman Logotron, which already includes a couple of outline typefaces in its wonderful Revelation painting package, and an Edinburgh-based newcomer Design Concept.

The 18 packages from Longman Logotron include Braille, Morse and Semaphore, all pictorial 'fonts' that might be of great use in schools – the Semaphore, for instance, is made up of pictures of cartoonish characters holding flags.

Other decorative faces available include a building bricks lookalike called Brix, and an LCD-type design called Digital. They can be used with Longman Logotron's own Pendown junior wordprocessor, as well as any other RISCOS package that makes use of the font manager.

Design Concept has been advertising its wares for a couple of months now; there are a few typefaces complemented by a couple of small utility programs. The typefaces include Ainslie, an upright handwriting-style face, another LCD and Acropolis, a font which will undoubtedly be much beloved of Greek restaurateurs.

They aren't as carefully hinted as the Acorn or EFF faces, and so the screen representation in smaller sizes isn't as good as you might expect, but then at £2 each, who's complaining. They are fine when printed out. These are all the sorts of faces you wouldn't use too often, and they are better for decorative headlines than for screeds of text you actually have to read. But for some types of documents, like posters for example, they can be just the thing to add a little zing.

One important point is that faces like these, and many in the huge EFF catalogue, do not have any PostScript equivalents. That means that there is no sensible way to print them if you have a PostScript laser printer, nor can you send any work to a typesetter. Here's where dot-matrix printers, direct drives and LaserJets have the jump on Postscript – any typeface you can see on screen can be printed out. If you want PostScript, then you have to limit yourself strictly to a relatively small set of compatible faces.

Longman Logotron is on 0223 323656, Design Concept is at 30 South Oswald Road, Edinburgh EH9 2HG, and the Electronic Font Foundry catalogue can be ordered free by telephoning 0344 872923.

DESIGNER SHADES

Among Design Concept's other offerings is Shade, a tiny utility that creates a Draw file consisting of lots of rectangles. Hmm. But the clever bit is that the rectangles are coloured, shading gradually between any two colours you select.

One use is for graduated tints in DTP files: select a frame, fire up Shade, select the start and end colour of the graduation, and drop the drawing onto the DTP frame. If you don't want the graduation vertical, group and rotate all the rectangles in Draw before putting them on the page. Simple and brilliant and just £1.50.

There's also CountWord for when you're using Edit and want to count how many words you have written, and all sorts of other stuff at prices only a little above what you'd pay for a blank disk.

NAUGHTY BOYS...

In an out of court settlement, Aleph One (purveyor of Arm 3 upgrades to the gentry) has received compensation from CJE Micros for unauthorised use of Aleph's software. As ever, the amount of damages remains 'undisclosed', though that's just what everyone really wants to know.

CJE admitted sending out lightly altered copies of the Aleph One Arm 3 cache control utility to people who bought CJE's competing Arm 3 upgrade. The author of the utility, Nick van Someren, has donated his money to charity. CJE is now writing its own replacement software, which will be sent to all the affected customers.

Rather more than slapped wrists, chaps. The Acorn market may be one in which most people are 'pals', and everyone knows everyone else. But this doesn't mean anybody can use anybody else's software. It's illegal and wrong.

A DATE FOR YOUR DIARY

This year's BBC Acorn User show, the top event of the year for Arc fans, will be in October, over the weekend of Friday 11 to Sunday 13. And it moves to its third venue in as many years; after Alexandra Palace and the Horticultural Hall, it's Wembley Conference Centre's turn to host the event. It's a bit like the Eurovision Song Contest, innit?

In fact, October could be a good date. As revealed in Express 122, Acorn's planned new portable Archimedes has been put off and looks like being launched in the autumn. By then, there could be something else to partner it. A marketing director of Acorn once said to me, and I quote, 'In the computer business, you have to do something pretty spectacular once every four years.'

This autumn marks the fourth anniversary of the launch of the first

Archimedes, the 310. Don't say you weren't warned.

TYPING TECHNOLOGY

Iota is an unashamedly ambitious young company - it aims to become top dog in the Acorn software market within two years. Its first releases aren't yet to hand, but they will be a typing tutor and Junior Database.

Until pen-based computers become the norm, there will always be new people who need to learn to type. In the early 80s, you could wade thigh-deep in typing tutor programs for home micros, but more recently they seem to have fallen out of favour; perhaps today's 16- and 32-bit micros are too advanced for such a mundane job.

So Iota's new typing tutor software makes an attractive option. As well as starting by teaching you to type 'ASDF' and 'LKJ' as with any good typing course, it gives you on-screen prompts to stop you looking down at your fingers, and summaries showing where on the keyboard you make most mistakes. Iota is on 0223 421542 if you're still at the hunt-and-peck stage.

LAYING IT ON THE LINE

Acom looks like challenging Arcterm 7's short-lived reign as the sole RISCOS comms program that's fully multi-tasking and desktop-friendly.

On the 8-bit Beeb, Acom and Acom Host were Acorn's preferred viewdata systems, and original author W.M. Roeling was also responsible for the Beebtel network viewdata system attached to many school Econets.

Recently announced by ECD Computers of Delft Holland, the new Acom is primarily a Viewdata terminal for RISCOS, with a 32-number phone directory and downloading using CET or Xmodem protocols. But it also offers scrolling terminal emulation too (VT52, 100, 200, ANSI) and so on.

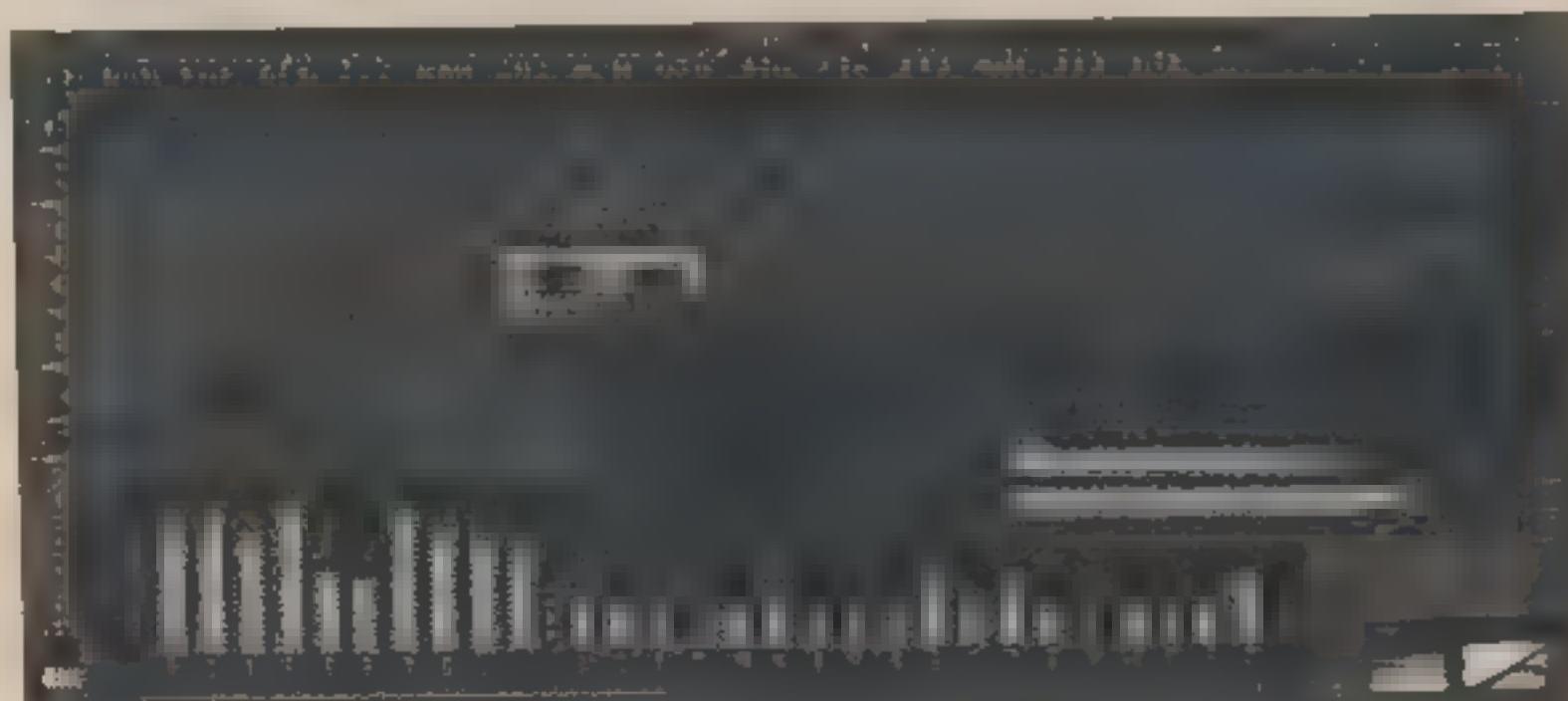
It lacks the scripting language of Arcterm but adds a better help system for new users and a full Viewdata editor for preparing Viewdata frames off-line. And ECD intends to offer upgrades to CEPT profile 2 (French Minitel) and to the much better resolution of profile 1 (German Bildschirmtext), in addition to the standard Prestel profile 3 graphics. Currently, you can only get the two better standards via Longman Logotron's non-multitasking and rather long in the tooth Arccomm software.

ECD is on 01031 15 147643.

COMING UP...

Over the next few weeks, I will be taking a look at a couple of newies from ace software house Fourth Dimension, and a bumper bundle of imaging news: AIM 2, a new framestore and Foster Findlay's X Image..

Ken Coumarin



* Learning to touch type need not be a slog with the new program from Iota.

Atari ST Owners!

Put Power into your cartridge port

Ultimate Ripper!

The cartridge your ST has been waiting for!

- Opens up any ST program
- Fits easily into the cartridge port
- Powerful Tool for all Atari ST users

Whether you are a programmer, games player, or just curious about the workings of your Atari ST, the Ultimate Ripper gives you the power that you need.

Just look at the features...

- Opens up any program
- Read Memory
- Search Memory
- Print Memory
- Disassemble
- Disassemble to Disk
- Edit Memory
- Search For Graphics
- Search for sprites
- Edit screen configurations
- Set up colour palettes
- Alter plane configurations
- Load & Save Screen Displays
- Run external TOS programs
- Load TOS Programs
- Load & Save graphic screens
- Low Level Disk Editor
- Disk Analyser
- Examine formats
- Format analyser
- File Editor
- Directory editor
- Formatter
- Break & Restart function
- Search for infinite lives
- Look for music
- Play music
- Load & save music
- Search for soundtracker music
- Search for Sound Samples
- Programmers Calculator built in
- Many more features
- Updates available with new software
- Full support for STE sound & Graphics

The Ultimate Ripper

is available **only** from

POWER COMPUTING

Ultimate Ripper.....

£39.95

Price includes VAT and delivery. All of our products carry a 1 year warranty

The Ultimate Ripper may be ordered by postal mail order or by telephone

We accept Access and Visa

POWER COMPUTING LTD

44a Stanley Street, Bedford, MK41 7RW

0234 273000

(5 lines)

We accept credit orders by telephone on the above number or by fax on 0234 270133

We reserve the right to change prices and product lines without notice

The Ultimate Ripper is sold on the understanding that it is not used to contravene the 1988 Copyright Act.

** Now Available - Full Colour Product Directory £1.49 with free utility disk! **

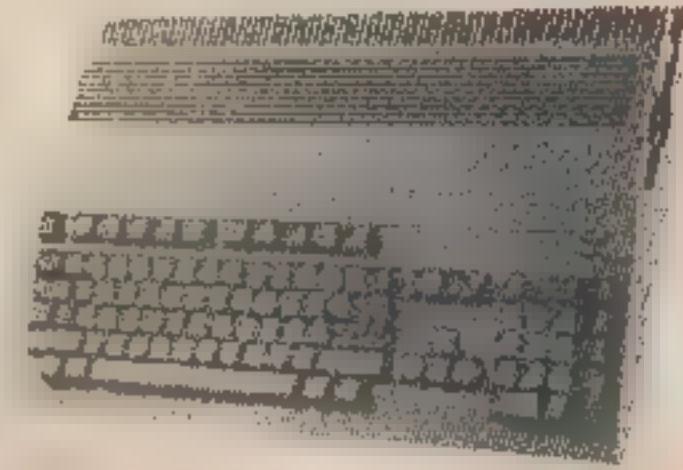
DEALER ENQUIRIES WELCOME - PHONE OR FAX FOR QUANTITY PRICING

AMIGA DEALS - CLEARANCE PRICE

AMIGA 500 STANDARD PACK

- ★ A500 computer ★ 512k RAM ★ 1Mb disk drive ★
 - ★ mouse ★ modulator ★
 - ★ power supply ★ operation-manuals ★
 - ★ workbench disks, etc. ★

£299.95



★ VERY LIMITED STOCKS
exclusive to N.C.E readers

AMIGA SCREEN GEMS PACK featuring ROBOCOP AND FRIENDS

Just Look At What You Get

- | | |
|-----------------------------|--------------------------------------|
| ★ Amiga as in standard pack | PLUS <i>exclusive to Dowling</i> |
| ★ Days of Thunder | ★ ROBOCOP |
| ★ Shadow of the Beast II | ★ BATMAN the Movie |
| ★ Back to the Future II | ★ GHOSTBUSTERS II |
| ★ Nightbreed | ★ INDIANA JONES and the Last Crusade |
| ★ Deluxe Paint II | |

Sale Price - Limited Stock £349.95

THE ALL NEW ULTIMATE GAMES PACK

Take the pack on the left featuring Robocop etc and add the following:

EXCLUSIVE DOWLING MEGA TEN GAME

PACK comprising RVF HONDA, DATASTORM, DUNGEON QUEST, E-STORM, GRAND MONSTER SLAM, KID GLOVES, POWERPLAY, SHUFFLEPACK CAFE, MICROPROSE SOCCER, TOWER OF BABEL.

Total RRP of games over £229

PLUS

★ Megablaster Joystick ★ High Quality Mousepad ★ Dustcover

Sale Price - Limited Stock £379.95

AMIGA	★ Uses latest 4 chip design	£27.95
1/2 MEG	★ Memory on/off switch	
UPGRADE	★ Option of battery backed clock	
BOARD	★ Full 12 month guarantee	
	★ New super low price	£32.95

3 1/2" HIGH QUALITY DISKS	
Box of 50.....	£19.95
Box of 100.....	£37.95
Box of 250.....	£79.95
Roll of 1000 labels.....	£5.99
★ 100% certified ★ Individually wrapped ★ 'Made in Japan' media ★ Fully guaranteed	

CUMANA CAX 354 DISK DRIVE "SCOOP"	
★ Latest slimline design	
★ High speed access	
★ Acknowledged as 'the best'	
RRP £89.95	SCOOP PRICE £59.95

DOWNGE

A590 20MB HARD DRIVE CLEARANCE

- ★ Official Commodore Hard Drive
- ★ Sockets for 2Mb RAM
- ★ Built in PSU
- STOCKS VERY LIMITED**
exclusive to N.C.E. Readers

£249.95

PACK 1 AMIGA PERIPHERAL PACKS PACK 2

Megaboard Ram Expansion.....	RRP £49.95	Cumana CAX 354 disk drive	RRP £89.95
40 capacity lockable disk box	RRP £9.95	Megaboard Ram Expansion	RRP £49.95
20 3.5" DS/DD disks with labels ...	RRP £19.95	40 capacity lockable disk box.....	RRP £9.95
		20 3.5" DS/DD disks with labels	RRP £19.95
		3.5" disk drive cleaner kit	RRP £9.95

TOTAL RRP £79.85PACK PRICE £39.95 TOTAL RRP £179.75 ...PACK PRICE £99.95

COMPUTERS

UNIT 3, FORGE CLOSE, LITTLE END ROAD, EATON SOCON, CAMBS

ATARI STE DEALS - CLEARANCE PRICE

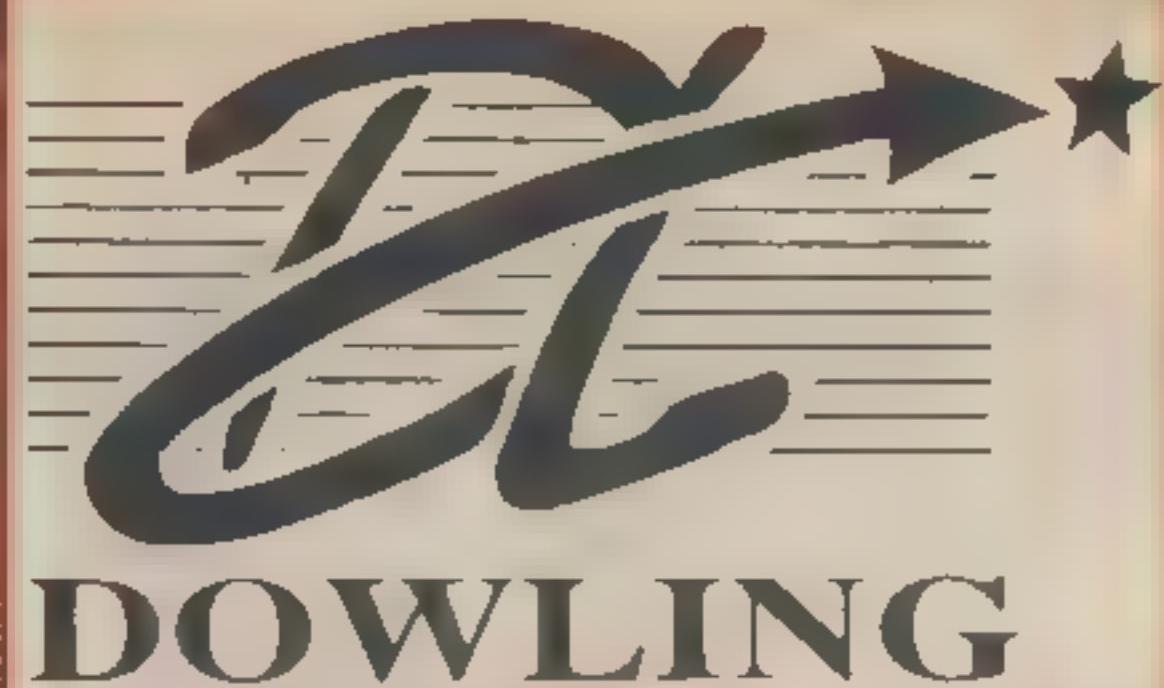
ATARI STE "TURBO" PACK

- ★ New Atari STE computer ★ Anarchy
- ★ Blood Money ★ Dragons Breath
- ★ H.K.M. ★ Impossible Mission
- ★ Indiana Jones ★ Outrun
- ★ Super Cycle ★ First Basic
- ★ Hyperpaint II ★ Music Maker II
- ★ Stos Games Creator

TOTAL RRP £399.95

£299.95

* VERY LIMITED STOCKS
exclusive to N.C.E readers



HOW TO ORDER



BY PHONE



Simply call our head office quoting your Access/Visa number on

Mon-Fri 0480 403222

Sat 0480 403304

By personally calling at
our St Neots Shop
6 Priory Mall,
St Neots, Cambs
Tel: 0480 403304

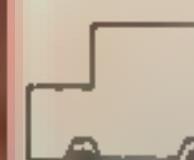


BY POST



Make cheques, building society drafts
or postal orders payable to:

Dowling Computers



DELIVERY (UK Mainland, most areas)

Please add £6 courier delivery for orders over £100, add £2 p&p for orders under.



GOLD CLUB SERVICE

- ★ 7 day money back guarantee if not completely satisfied
- ★ 30 day exchange for new policy should a fault occur
- ★ 1 year guarantee giving FREE collection and delivery service should a fault occur
- ★ Exclusive gold card with personal membership number entitling you to special offers
- ★ All this for a nominal £10 per item over £100

★ NEW ★ PLATINUM CARD SERVICE ★ NEW ★

- ★ All the benefits of the successful gold card service (above) plus the following

- Extended 2 year guarantee from date of purchase. (*Peace of mind for 2 years*)
- Free use of loan machine should yours need to be repaired. (*Now you never need be without your expensive purchase*)
- Free collection and delivery service for the full two years should a fault occur. (*Just make one simple phone call and leave the rest to us!*)
- Exclusive platinum privileged customer card entitling you to special offers.
- All of these benefits for the incredible price of just £99.95 per item purchased.

N.B. In the unlikely case of shortages of identical model loan machines a suitable alternative will be offered.

WHY CHOOSE DOWLING?

★ ESTABLISHED OVER 5 YEARS

With a growing reputation for "putting the customer first". We intend to satisfy many more customers for years to come

★ TECHNICAL SUPPORT/ON-SITE ENGINEERS

Employing over 20 specialist staff, we are equipped to deal with the majority of queries

★ FULL TESTING PROCEDURE

All computer hardware is tested prior to despatch, proving Dowlings commitment to customer care

So choose Dowling and put our reputation to the test!

NEW!

STE 1Mb, 2Mb and 4Mb LANGUAGE LEARNING PACKS

Yet another Dowling exclusive.

Enhanced STE computer plus over £100 of software comprising

The French Mistress ..RRP £19.95	1Mb STE	£339.95
The German Master ..RRP £19.95		
The Italian Tutor.....RRP £19.95	2Mb STE	£379.95
The Spanish TutorRRP £19.95		
Metacomco BasicRRP £24.95	4Mb STE	£459.95

Total RRP £104.75

SM124 Mono Monitor (when purchased with ST) only £99.95

THE NEW AMIGA 1500 ONLY £699.95 INC VAT

Not only does the Amiga 1500 accept all standard Amiga 2000 peripherals but can also be upgraded to full IBM compatibility. Just feast your eyes on what you get:-

- ★ Latest Commodore Amiga 1500 computer complete with 1Mb of Ram (expandable to 9Mb) and 2 x 3.5" 880Kb disk drives.
- ★ Platinum Works:- An integrated word processor, database and spreadsheet package.
- ★ Deluxe Paint III :- Paint/Animation package.
- ★ Populous & Sim City:- Two great strategy games.
- ★ Battlechess:- The most exciting game of chess you'll ever play.
- ★ Their finest hour:- Battle of Britain brought to life.
- ★ A-Z of Computer jargon.
- ★ 'Get The Most Out Of Your Amiga':- Two introduction books.
- ★ Optional 1084S Stereo colour monitor.

This pack with 1084S
colour monitor

£929.95

THE NEW 200 SERIES FROM



"The best printers just got better!"

LC-200 FACT FILE

- ★ Multi-purpose 9-pin, 80 column dot matrix printer with colour
- ★ Black and colour ribbons included as standard
- ★ Electronic dip switches (see LC24-200)
- ★ 180 cps draft elite/45 cps near letter quality
- ★ High speed draft facility 225 cps at 12 cpi
- ★ Swivel selectable push or pull tractor
- ★ Bottom feed

RRP £297.85

OUR PRICE
£199.95

STAR LC10 MONO £149.95

LC24-200 FACT FILE

- ★ Versatile 24-pin 80 column dot matrix printer
- ★ 200 cps in draft elite/67 cps in letter quality mode
- ★ 10 resident LQ fonts
- ★ A high speed draft facility of 222cps at 10cpi
- ★ Swivel selectable push or pull tractor
- ★ Bottom feed
- ★ Advanced paper parking with sheet feeder installed
- ★ The economy of first and last line printing
- ★ 7 K-byte buffer expandable to 39K-bytes

RRP £366.85

OUR PRICE
£239.95

STAR LC24-10 £199.95

LC24-200 COLOUR FACT FILE

- ★ Multi-purpose colour version of the 24-pin LC24-200
- ★ Seven colour printing - black, purple, orange, green, pink, blue and yellow
- ★ 30 K-byte buffer expandable to 62 K-bytes
- ★ 10 resident letter quality fonts: Sanserif, Times Roman, Courier, Prestige, Script and italic versions
- ★ Electronic dip switches operable from the push button front control panel (as the LC24-200 mono version)

RRP £424.35

OUR PRICE
£279.95

TELESALES ORDER LINE (MON-FRI) 0480 403222/(SAT) 0480 403304

NEW LOW PRICES FROM BCS

BULK BUYERS

50 3½ DS/DD	£21
100 3½ DS/DD	£33
150 3½ DS/DD	£47
200 3½ DS/DD	£60
400 3½ DS/DD	£115
500 3½ DS/DD	£135
1000 3½ DS/DD	£CALL

Price incl VAT & P&P

DS/DD

DISKS & BOXES

50 Disks + 80 Box	£23
100 Disks + 80 Box	£36
150 Disks + 80 Box	£50
200 Disks + 280 Boxes	£64
400 Disks + 80 Box	£118
500 Disks + 400 Boxes	£141

Price inc VAT & P&P

3½ High Density

SONY BULK 38p

60p

100 3½ HD £57.50
inc. VAT & P&P

3½ 40 Cap Box £4
80 Cap Box £4.30

3½ 150 Cap Posso Box £14.95

5½ 50 Cap Box £5
100 Cap Box £5.75

STAR LC-200 Colour Printer £199

STAR LC-24-200 Colour Printer £310

Philips CM8833 MKII Monitor £209

Add £3.50 P&P, add £4.00 for 3 day delivery, add £7.50 2 day, £9.00 next day (from despatch)

Cheques will be held for clearance

AMIGAS

Amiga 500	£310
Screen Gems	£355
+ Astra Games	£385
Screen Gems 1Mb	£365
Class of the 90's	£510
First Steps	£510
Amiga 1500	£665
Plus Monitor	£915

ATARIS

A590 incl. 2Mb RAM	£355
Dust Cover	£5
1 Meg Upgrade	£29
1 Meg + Clock	£35
Cumana Drive	£63
Ext. Amiga Drive	£56
1.3 Kickstart Upgrade	£50
Mouse Mat	£2.50
Zipstick	£11
Jetsighter	£12

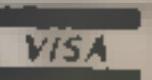
Lynx

Discovery	£245
Turbo Pack	£330
Cumana Drive	£68
Dust Cover	£5

Call or Send cheques/Postal Orders to
BCS LTD, 349 Ditchling Road, Brighton E.Sussex BN1 6JJ

Tel 0273 506269 or 0831 279084

Trade/government/education orders welcome



SKYE COMPUTERS

IBM compatible 286 systems

- ★ 12Mhz
- ★ 1Mb RAM
- ★ 40Mb hard disk
- ★ Mono VGA monitor
- ★ 1.2Mb floppy

Only £635 + del. & VAT

Any other configurations available

For brochure + price list

Phone/Fax SKYE Computers
0203 663215



64

FRACTALS

Fractals are complex patterns created using simple mathematical formulae. They look as if you need some heavy duty equipment and programs the length of War and Peace to bring them into being, but in fact, things need not be so complicated. The following program, sent in to me by Chris Wrad of Northampton shows how easy it is to create stunning graphics on your C64 like the ones below. The picture take quite a while to build up!

While the program is running press any key to stop the drawing, and press any key again to quit the program

```

■ DIM A(4), B(4), C(4),
D(4), E(4), F(4), P(4)
■ DATA 4
30 DATA 0,0,0,.16,0,0,.01
40 DATA .2,-.26,-.23,-.22,0,
1,.6,.07
50 DATA -.15,.28,.26,.24,
0,.44,.07
60 DATA .85,.04,-.04,.85,0,
1.6,.85
70 READ M
80 PT=0
90 FOR J=1 TO M
100 READ
A(J),B(J),C(J),D(J),E(J),F(J),
PK
110 PT=PT+PK
120 P(J)=PT
130 NEXT J
140 GOSUB 500
150 XSCALE=.25
160 YSCALE=.16
170 XOFFSET=.140
180 YOFFSET=.10
190 X=0
200 Y=0
220 PK=RND(1)
230 IF PK<=P(1) THEN K=1:GOTO 240
231 IF PK<=P(2) THEN K=2:GOTO 240
232 IF PK<=P(3) THEN K=3:GOTO 240
233 K=4
240 NX=A(K)*X+B(K)*Y+E(K)
250 NY=C(K)*X+D(K)*Y+F(K)
260 X=NX
270 Y=NY
280 IF N>10 THEN
XX=X*XSCALE+XOFFSET:YY=Y*YSCALE
LE+YOFFSET:GOSUB 600
290 GET AS:IF AS<>"" THEN
GOTO 310
300 N=N+1:GOTO 220
310 GET AS: IF AS="" THEN
GOTO 310

```

Having run this main program you can change some of the lines to make new patterns such as a tree or a weird thing called a 'Sierpinski Triangle'.

● For the tree:

```

20 DATA 4
30 DATA 0,0,0,.50,0,0,.05
40 DATA .01,0,0,.10,0,.20,.15
50 DATA .42,-.42,.42,.42,0,
.20,.40
60 DATA .42,.42,-.42,.42,0,
.20,.40
150 XSCALE=.370
160 YSCALE=.265
170 XOFFSET=.160
180 YOFFSET=.50
280 IF N>10 THEN
XX=X*XSCALE+XOFFSET:YY=Y*YSCALE
LE+YOFFSET:GOSUB 600

```

● For the triangle:

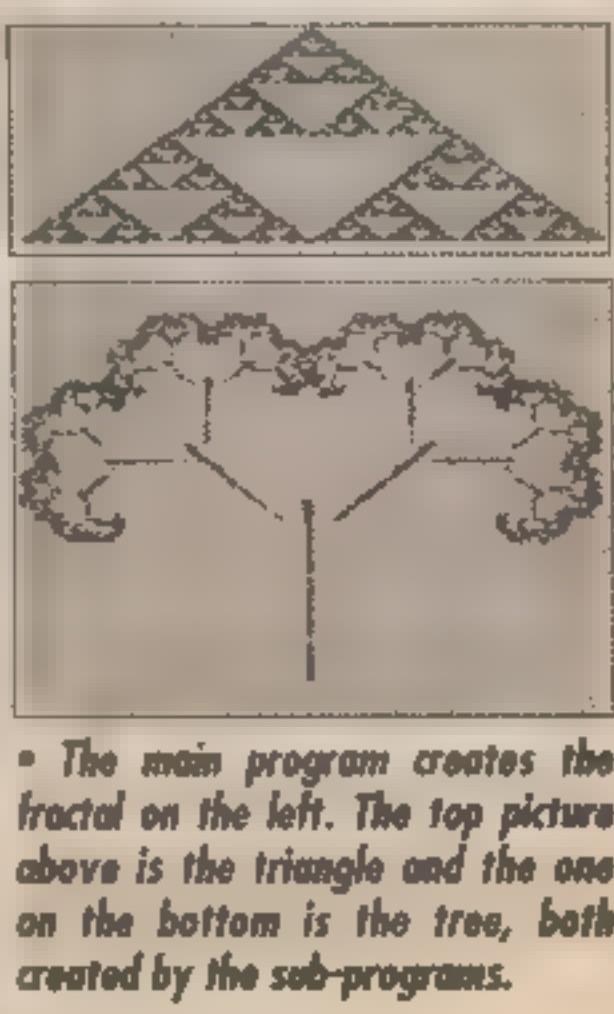
```

20 DATA 3
30 DATA .50,0,0,0.50,0,0,.33
40 DATA .50,0,0,.50,1,0,.33
50 DATA .50,0,0,.50,.50,.50,
.34
150 XSCALE=.120
160 YSCALE=.110
170 XOFFSET=.50
180 YOFFSET=.50

```

NEW NAME

Next week you have a new host taking you through the world of the C64, a talented young chap called Andrew Roberts who promises a few surprises. Be here for the start of a new area.



The main program creates the fractal on the left. The top picture above is the triangle and the one on the bottom is the tree, both created by the sub-programs.

Spectrum

INDIE RAVE

Calling all mystic troll-bashing adventuring types. Here's a bumper bargain selection of stuff that should be right up your street, no matter which far away land, planet or other dimension it's located in.

Zenobi Software, undoubtedly king of the Speccy adventure scene, has more adventures on offer than any sane person could play, let alone complete. Luckily most adventurers are completely hatstand and should therefore be interested in what the company has to offer. Foremost in the throbbing multitude available are the two volumes of mail order adventure compilations - *The Best of the Indies*. Both are endorsed by bearded guru and round nice bloke Mike Gerrard, who's written the adventure section in *Your Sinclair* since the Messianic period.

The six games gathered on *The Best of the Indies Volume One* have all been raved about by Mike when originally released and with good reason too. Even stingy old me went mad about the first game to load, *Double Agent*. It represents something a bit different from the usual format of adventures with a neat line in schizophrenic gameplay.

The screen's divided into two halves, one for each of the secret agents. You switch control between them as you try to foil the usual dastardly aliens and recover a crystal. One of the agents under your control is strong but a bit thick; the other is decidedly weedy but intelligent. The devious author starts them in locations where the other's respective talents are needed to progress.

Double Agent is more of a puzzle-based game with no graphics or purple prose and it's sure to provoke severe brain strain in even the most battle hardened adventure experts.

Cloud 99 by Linda Wright is another game that had lots of nice



Learn how to make Robocop really invincible with our handy cheats for Robocop 2.

things said about it on its original release. The plot provides a much needed break from the usual fantasy/sci fi stuff. Inspired by a dream, you are expected to investigate the slightly surreal goings on concerning Jack Frost and the weather city of Cloud 99. It's all a bit bizarre but beautifully presented and packed to the edges with yet more devious and downright difficult puzzles.

The Labour of Hercules is next up and is a corking good legendary game featuring all your fave Greek mythological characters. The idea is to complete the 12 tasks of Hercules, as in the legend. Each task is excellently structured, seemingly impossible to complete at first but so obvious when you know how.

The next one, *Domes of Sha*, is set on somewhere called, in typical computer game style, OLAXAS, but don't let that put you off this spiffing and rather large text based quest.

The Secret of Little Hodcome is one of Zenobi's own adventures and fraying around the edges a bit when compared to the rest. It's well structured, though, as you try to rid the hamlet of Little Hodcome of an evil so unspeakable I can't speak about it. No doubt Jeremy Beadle must be involved in it somehow. Mike Gerrard describes it as a good introductory quest and I'd back that all the way.

Bringing up the rear is *Retarded Creatures and Caverns*, a top notch spoof of the original prototype mainframe adventure game. Starring Zenobi star Bulbo, a Hobbit-inspired character, it's full of more zaniness and wackiness than a whole month of kid's Saturday morning TV. The bearded one awarded it a Mega Game and he doesn't band those around without good reason. As with all Zenobi games it's well worth typing in any swear words you know...

Best of the Indies Volume One costs a paltry £3.99 and is recommended to any one of a remotely adventurous nature. Order from Zenobi Software, 26 Spotland Tops, Cutgate, Rochdale, Lancashire OL12 7NX.

ROBOHINTS

S Wells of Somerset has just very kindly heaved a huge batch of tips on my desk in the name of helping his fellow Specchums. So a round of applause, if you please, to welcome this comprehensive sorting out of *Robocop II*.

Good old S sent me the solutions for the two memory bank sub games after levels one and two. He tells me R=Right, L=Left, U=Up, D=Down and F is for Fire.

Got that? Here then, is the solution for the first one:

Part One: 2U, 1R, 1D, 1R, 4D, 7L, 1U, 2L, 2U, 4R, 1U, 2R, 3U, 2L, 1D, 1L, 1U, 1L, 1D, 2L, 1U.

Part Two: 2D, 2R, 1U, 2R, 4U, 2L, 1D, 1L, 2D, 5L, 4D, 2R, 3FR, 3FL, 2FU, 2FD, 1U, 1R, 1U.

Part Three: 1F, 1D, 3L, 3U, 2L, 2FR, 2FL, 3U, 1FR, 2FL, 3U, 1FR, 1FL, 3R, 1U, 1R, 2D, 2R, 4D, 2FU, 3R, 1D. **Part Four:** 1U, 1L, 1U, 1L, 2FD, 2L, 2U, 6R.

SWITCHBOARD

75 Kirkmuir Drive, Stewarton, Ayrshire, KA3 3HP

Tel: (0560) 85296

Fax: Voice Request

HEWLETT PACKARD PRINTERS / PLOTTERS

Deskjet 500 £349

3 year warranty

Paintjet £399

Colour Deskjet

1 year warranty

**HP 7440A Color-Pro
8-pen Plotter £369**

1 year warranty

Prices exclude VAT

ALL MAJOR CREDIT CARDS ACCEPTED

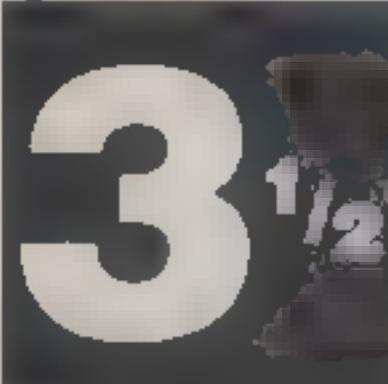
COMPUTER DISCOUNT SUPPLIES

24 Cedar Road, Abington, Northampton NN1 4RN (callers welcome)

24 hour service
7 days a week

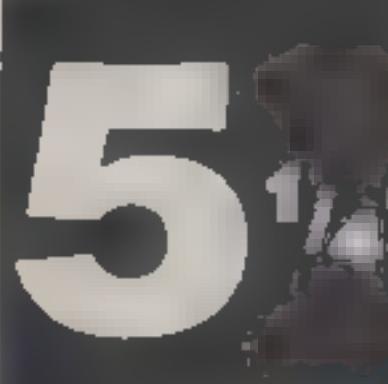
DS/DD DISKS
100% certified
error free

Trade enquiries
welcome



3.5 DS/DD DISKS FOR
AMIGA, ST, PC etc
1 to 99 = 38p
100 to 199 = 37p
200 to 399 = 36p
400 to 499 = 35p
500 to 1000 = 33p
INCLUDING LABELS

3.5 HIGH DENSITY DISKS
FOR IBM, AT, XT etc
10 = £8.90
25 = £21.05
50 = £38.95
100 = £63.50
INCLUDING LABELS



5.25 DS/DD 48/96 tpi FOR
IBM, PC AND CLONES etc
1 to 99 = 25p
100 to 199 = 24p
200 to 399 = 23p
400 to 499 = 22p
500 to 1000 = 21p
COMPLETE WITH LABELS,
ENVELOPES AND W.P.'S

5.25 HIGH DENSITY DISKS
FOR IBM, AT etc
10 = £4.60
25 = £11.00
50 = £20.00
100 = £41.50
COMPLETE WITH LABELS,
ENVELOPES AND W.P.'S

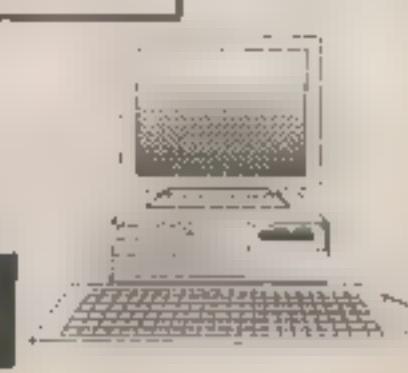
Post add
£3.50
per order.
Next day
£9.00

LOCKABLE DISK BOXES
3.5" x 40 capacity = £4.00
3.5" x 80 capacity = £5.00
3.5" x 100 capacity = £6.00
3.5" x 120 capacity = £7.00
5.25" x 50 capacity = £4.00
5.25" x 100 capacity = £5.50

ROLL OF LABELS
250 labels = £2.50
500 labels = £4.00
1000 labels = £8.00



**TELEPHONE
0604 - 715469
24 HR HOTLINE**



1FD, 1R, 1D, 1R, 3D, 2L, 2LF, 3R, 3D, 4L, 2U, 3FR.

Providing I've typed it out correctly that should see you through. The second memory bank piece can be similarly dispensed with by following this set of instructions.

Part One: 1R, 3D, 1R, 1U, 1R, 1U, 1L, 2U, 1R, 3U, 3FL, 3FR, 3L, 2D, 2L, 1FR, 4FL, 3D.

Part Two: 1FR, 1L, 2D, 1FD, 3R, 1D, 1R, 5U, 1FR, 1U, 1L, 1U, 3FL, 3FR, 5L, 1D, 2L, 4D.

Part Three: 1FR, 3L, 1D, 2L, 2D, 1FU, 1FR, 1FL, 2R, 2FU, 2R, 2FR, 1U, 2R, 2FR, 1U, 2R, 1FU, 1D, 2R, 4U, 1L, 2U, 1R.

Part Four: 2L, 4U, 3FL, 3FR, 2L, 1D, 1L, 2D, 1R, 3D, 1R, 1U, 3R, 2D, 2R, 2FR, 5U, 2R, 4FD, 4FU, 1R, 2D, 1L.

And there's more Robocop II jiggery-pojery from S with the codes for the lifts which are on level three, apparently - LIFT ONE = 4, LIFT TWO = 14, LIFT THREE = 7, LIFT FOUR = 40, LIFT FIVE = 19, LIFT SIX = 8

You've now got absolutely no good excuses for not completing the whole thing. If you're still too pathetic to finish it I suggest forging a note from your Mum or feigning an old sporting injury. Thanks S!

SEND 'EM IN

Have you got any tips, pokes or cheats for Speccy or SAM games? Send everything you know to Robin Alway, New Computer Express, 30 Monmouth Street, Bath BA1 2AW.

Robin Alway

WRITE ALL OVER YOUR ST

By now you will have heard about Atari's new wonder computer, the ST Pad. You know, the one that uses a stylus as opposed to a keyboard for inputting the information. Well, hot from the Z-Net online newsletter, I have some more information about this exciting machine's technical specification.

The ST Pad runs off the standard ST 68000 central processor, running at 8MHz. It has an A4 footprint and is 3.5cm thick. It will come in two memory configurations, 1MB and 4MB, both without a hard drive. In terms of interfacing, there's a MIDI port, an RS232 and a parallel interface, a DMA port and a Bus connector.

One of the options, will be a standard keyboard, which is compatible with Mega STs. It can run for up to 10 hours before needing a recharge, which is surprising when you consider that the batteries have to drive a 640/400 resolution LCD screen.

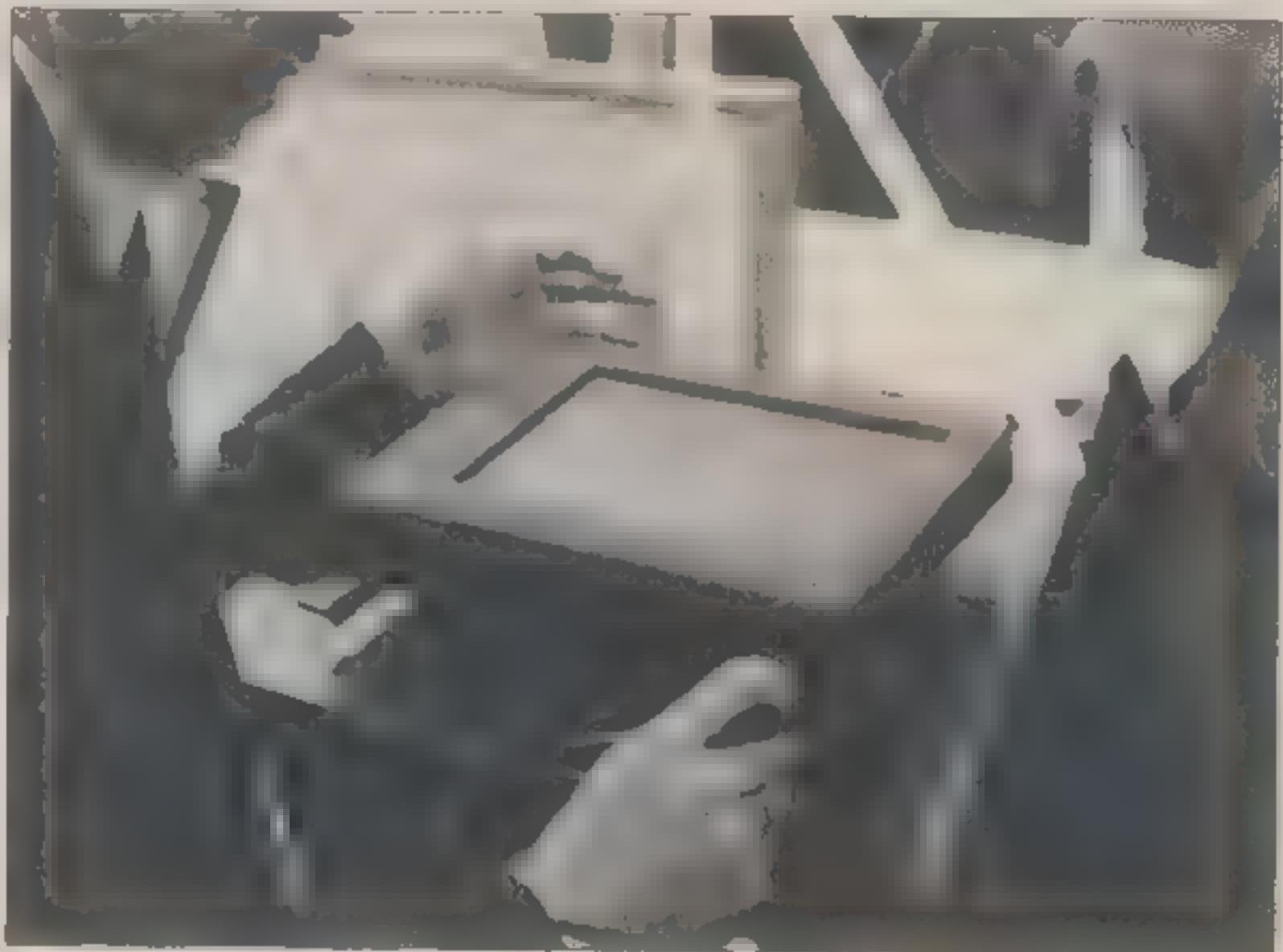
The unit can accept and understand a wide range of character types, including Japanese and Cyrillic. What's more you can swap between writing text and drawing sketches quickly and simply. Once you have finished writing or sketching the computer will drop into a

halt mode during which time it will not draw power from the battery; it will then automatically start up again as soon as you pick up the stylus.

ST Pad comes with two silicon drive slots. These can be used for two purposes, either as extra RAM or to load in applications software. These can be

up to 4MB in size, which means that programs of considerable size can be quickly and easily loaded.

There is no word as yet on release dates or possible prices. But if the unit does come in at under £600 it will be a major coup for Atari and a mould breaking machine.



* The ST Pad has the potential to be a groundbreaking machine.

NEW COMPUTER EXPRESS

Britain's biggest selling computer weekly, packed with the latest news, reviews and technical tips for your machine!

Save time, save trouble, and avoid disappointment...

guarantee your copy of NCE every week and get it delivered at no extra charge

54 ISSUES FOR JUST £47.50

Complete and return the coupon or telephone our credit card hotline on 0458 74011 NOW!

YES! Please enter my subscription for 54 weekly issues of New Computer Express at the rate listed below.

UK £47.50

Europe £79.95

Rest of World £104.95

N.B. All overseas subs are sent by Airmail for speed and safety.

Name _____

Address _____

Postcode _____

Tel _____

I wish to pay by (please tick as appropriate)

Access Visa Cheque PO

Card No

Expiry date

Please make cheques/PO payable to Future Publishing Ltd and send with this coupon to: NEW COMPUTER EXPRESS, SUBSCRIPTIONS, FREEPOST, SOMERTON, TA11 7BR.

FIRST CALAMUS-AID

Admit it, Calamus is a hard program with which to get to grips. We know that it's the most comprehensive DTP package available for the ST, but wading around in those icons is comparable to finding your way around the Gobi desert with only a piece of sandpaper as a map. CalAssistant is a memory resident help program for Calamus. It actually sits on top of Calamus as an accessory program, which means that you can refer to it at any point in the proceedings.

The program uses text, icons and pictures to explain each command and adds to these with hints and tips on getting the most out of that particular function. What's more each help section will refer you to the appropriate page in the Calamus manual.

Spar Systems, programmer of CalAssistant, tells me that the whole package runs in only 90K. However the company adds that it will only run in monochrome mode and you will need a hard drive if you want the software to run at anything approaching full speed.

CalAssistant is available from Spar Systems, 381 Autumn Avenue, Brooklyn, NY 11208, USA, telephone 0101 718 2353169. The recommended retail price is \$34.95.

TITLED TV

If you have a video camera and an ST, then the thought has probably crossed your mind that you could combine the two. One of the most obvious applications for this kind of thing is

creating title sequences for your own film making efforts.

TV Titles 2.0 is a program which enables you to create professional looking titles that can be dumped to video via a standard television lead. Used in conjunction with a genlock, you could overlay professional sub-titles or comments on images.

The actual titler program consists of a flexible mouse driven front end. Images or text, can be treated to a variety of effects and then run in a set sequence. More than one sequence can be held in memory at a time, making long titles possible.

The displayed text or image can be scrolled, spiralled, dissolved, faded, wiped, venetian wiped or shuttered. These effects can be cued precisely by means of the delay function. All the colours are fully definable and these can be "flashed" or colour cycled to produce animation effects.

When you're happy with the title sequence you can plug the video in and run the program. This kind of program is almost certainly of use to small video outfits as well as home users.

If it sounds like your kind of thing then telephone Caledonia PDL on 0463 225736 or write to 250 Oldtown Road, Hilton, Inverness, IV2 4PT. TV Titles 2.0 costs £25 inclusive of postage and packaging.

GET YOUR BACKUP

Anyone who's used a hard drive for longer than two weeks, knows the one golden rule: always back it up.

You see, hard drives are irresponsible pieces of hardware, the sole purpose of which is to crash at the worst possible moment, like when you've just saved your memoirs to disk.

Previously the best backup utility around was a nifty progette by the name of Turtle, which was icon driven and very flexible. A brand new backup program has been brought to my attention and it goes by the (rather stupid if you ask me) name of *The Good Backup Utility (GBU)*.

The GBU maintains a shadow of your hard drive, either on another partition or on a series of floppy disks. It sets itself apart from other back-up programs by using an incremental save feature. What this means is that you'll only have to save to floppy or hard drive programs which have been altered, added or deleted.

This intelligent saving means that it will be considerably quicker than other utilities which simply bung the whole hard drive down on 40 or so disks. In effect, this means that the more often you backup, the less time it takes.

GBU is interruptable. This means that you can hit the space bar and stop it saving. Then when you have a bit more time, the program will remember where you have saved up to and carry on from that point.

The program works on all versions of TOS as well as all versions of ST. The programs costs a mere \$29.95 and is available from "The Computer Bug" in Hadley, MA, USA. Telephone the company on 0101 412 584 7722.

Andy Hutchinson

CHECK OUT ALL THE OTHER SPECIALIST COLUMNS IN NEW COMPUTER EXPRESS

- WHOLE WIRED WORLD
- TECH TIPS
- GAMES WEEK
- PD COLUMN
- CIRCUIT CITY
- PROGRAMMING

PLUS THE HOTTEST REVIEWS AND FEATURES EVERY WEEK

MEGADRIVE

UK Megadrive + Michael Jackson Game + Video	£184.95
JPN Megadrive Pal + 1 game	£139.95
JPN Game Adaptor	£14.00
Arcade Power Stick	£39.00
Joy Pad	£14.00
SG Jetfighter	£14.95
Scart Lead	£15.00
Stereo Lead	£8.95

NEW GAMES

Aero Blasters	£33.00
Alestra Musha	£33.00
Darius II	£38.00
Elemental Master	£28.00
Gaiars	£38.00
J.M American Football	£38.00
Joe Montana Football	£38.00
Junction	£28.00
Kai Ge Ki	£38.00
Magical Hat	£28.00
Same Same Same	£31.00
Trampoline Terror	£38.00
Voltified	£28.00
Wrestle Ball	£38.00

SPECIAL OFFERS

Battle Squadron	£28.00
Curse	£19.00
Dangerous Seed	£26.00
DJ Boy	£19.00
Hard Drivin	£26.00
Heavy Unit	£26.00
Hell Fire	£19.00
Klax	£23.00
Mickey Mouse	£24.00
Sword of Vermilion US	£37.00
Whip Rush	£19.00

SPORTS AND SIMS

Herzog Zwei UK	£33.00
Italia 90	£33.00
Ringside Angels	£33.00
Super League Baseball	£33.00
Super Monaco GP	£33.00
Super Real Basketball	£33.00

Nintendo

Nintendo Action Set	£99.00
New Advantage	£37.00
Nes Max Turbo	£28.00
Python 2 Joystick	£9.99
Cart Cleaning	£9.99
Bayon Billy	£37.00
Black Manta	£35.00
Double Dragon	£37.00
Double Dragon II	£37.00
Mega Man II	£38.00
Paperboy	£38.00
Pinbot	£37.00
Probector	£37.00
Snake Rattle Roll	£37.00
Solar Jetman	£38.00
Stealth ATF	£37.00
Super Mario II	£38.00
Super Off Road	£37.00
World Wrestling	£37.00

CALL FOR ALL SECOND HAND SWAPS AND GAMES**FAMICOM**

Famicom + 2 Joy Pads + 2 Free Games	£299.00
Bomb Buzai	£29.00
F-Zero	£43.00
Final Flight	£48.00
Gradius II	£48.00
Pilot Wings	£48.00
Populous	£48.00
Big Ron	£48.00
Super Mario World	£43.00
Hole In One Golf	£48.00
R-Type II	Call
SD The Great Battle	£43.00

PC ENGINE hand held
£285
Including Game

GAMEBOY

Gameboy + game	£59.00
Gamelight	£9.99
Game Pack Carry Case	£7.99
Hard Carry Case	£9.99
Compact Carry Case	£23.95
Balloon Kid	£29.00
Boxing	£19.00
Boulder Dash	£24.00
Buna Fighter	£24.00
Bugs Bunny	£28.00
Dragon Man	£24.00
Ghostbusters II	£28.00
Kwirk	£24.00
Paperboy	£24.00
Revenge of Gator	£24.00
Robocop	£28.00
Solar Sinker	£19.00
Soccer Boy	£24.00
Spiderman	£23.00
Teenage Mutant Ninja Turtles	£24.00
Wrestling	£24.00
Zoids	£24.00

We also buy and part exchange used cartridges. Many more items for other consoles and computers in stock please phone for more details and ask for ADAM or PETE or call in to the shop



Computer Emporium

37 Pinfold Gate, Loughborough
Leics, LE11 1SG

TEL (0509) 211799 FAX (0509) 881600

AMIGA 500 ASTRA PACK £355

Includes 10 Games
Datastorm, Dungeon Quest,
Grand Monster Slam, E-Motion,
Kid Gloves, Powerplay, RVF
Honda, Suffiepack, Cafe and
Tower of Babel.

ALL AMIGA PACKS INCLUDE DELIVERY AND VAT

ADD £1 FOR ALL OTHER ORDERS FOR P&P

Amiga Disk Drives and Upgrades

External 3.5" Drive with RVF/Beast	£59.00
Kick Off/Battle SQ	£94.00
Ashcom 1 meg + clock	£39.00
meg + Kick Off	£49.00
meg + Dung Master	£49.00
Amiga Sound + Jumping	£49.00
Jackson/Corporation	£49.00
Mouse Contriver	£29.00
Mouse and Captive	£35.00
Midi Interface Micro	£25.00
Midi Interface	£35.00
Quarter	£45.00
5 Octave Keyboard	£99.00
1084s Monitor	£265.00
Philips 8833 MK2	£259.00

BOXES

3.5" 18 caps	.95p
3.5" 40 caps	£4.55
3.5" 80 caps	£5.45
5.25" 10 caps	£1.10
5.25" 50 caps	£4.55
5.25" 100 caps	£5.45
3" 20 caps	£3.95

WHOLE WIRED WORLD

A new PC emulator for the Amiga enters beta testing phase, Tandy slashes PC prices and launches a budget CD drive, while Apple sets up a new Mac factory...

BUDGET EMULATOR FOR AMIGA

Most Amiga users will be aware of *Transformer*, a PC emulator for their machines. Trouble is, *Transformer* only runs properly on a 68000-based Amiga, so users of 68020 and 68030-based machines can experience more than their fair share of problems – as if they haven't enough running DOS!

Mark Tomlinson of Christchurch in New Zealand has got round this problem by developing a PC emulator specifically for the 68020 and 68030-based Amigas. And the great thing is, he's only asking US\$30 for the program.

To promote the package, Tomlinson is distributing a demo version to the online networks, such as Compuserve and Genie. The demo has two limitations: just one floppy disk drive is supported, and only 2Mb of hard disk space can be used.

According to Tomlinson, his program is still in its beta test stage, so bug reports are welcomed. The final version will be shipped free to beta testers.

To run *IBM B*, as the package is called, Amigans will need a 68020 or better-equipped Amiga fitted with at least 2Mb of fast RAM – the package won't run on a 68000-based Amiga. The reason for gobbling so much memory, Tomlinson says, is that the emulator allocates 1Mb of memory to the PC's virtual address space. A maths co-processor is not required, but later versions of the *IBM B* emulator may use one to emulate an 8087.

For further information contact: Mark Tomlinson, 30 Kimer St



• Video Toaster: new down for the Amiga?

Christchurch, New Zealand.

Email via Usenet
tomlinson@elec.canterbury.ac.nz

AMIGA EXPO IN NEW YORK

While Cebit-goers were tramping home from Cebit in Hannover in late March, New York City played host to Amigaworld Expo. The show, which spanned three days, brought a host of Amiga goodies to the fore, not the least of which was Newtek's *Video Toaster*, which got its first major hands-on airing to the public.

Newtek managed to rally staff from ASDG and GVP (two Amiga mainstay companies) together for its press launch of the *Toaster*. Mark Randall of Newtek discussed how Apple developed the Macintosh platform as a revolutionary machine that would bring high end graphics power into the homes of many.

After initial success, sales of the

Mac dropped abruptly after only six months on the market. Everyone thought this would be the end of the machine, according to Randall. Then the Laserwriter was introduced, and the Mac found its niche in the DTP market, and the rest is, as they say, history.

Randall then said that the *Video Toaster* is to the Amiga what the Laserwriter was to the Mac – it is the tool that will bring the Amiga to the forefront of the desktop video marketplace and take the Amiga out of the doldrums. He said that many people have approached Newtek saying "Wow – what a breakthrough – too bad you picked the wrong machine to create this thing for – if only you had done this for the IBM or Mac..."

Randall claimed that the reality is that the Amiga is the only machine Newtek could have chosen for the job, because it is the only true video machine. The *Toaster* would not have been possible on any other platform.

GVP staff told show-goers about their role in the *Toaster*'s future by explaining the importance of its accelerators to achieving the maximum power that the *Toaster* is capable of.

GVP's 33 and 50 MHz accelerators for the Amiga are great time-savers when it comes to rendering with *Lightwave*, the three-dimensional modelling package bundled with the *Toaster*, and are a boon for the quick loading of stored graphics images.

Elsewhere at the show, Mast Technologies was demonstrating its *Colourburst* 24-bit video board for the Amiga that is expected to sell for under \$600 – not bad for a true 24-bit colour card that offers stunning images.

Among several other interesting new products on show were: ICD's *Novia 20* internal 20 MB Hard Drive for the A500 Amiga; Sunsize Industries' *AD1012* and *AD1016* digital audio cards which can handle 12-bit and 16-bit sound respectively, with up to 100,000 samples per second – availability of hard disk storage space is the only limitation on sample length; Softgig's *Art Expressions* structured drawing package; GVP's *Scala* presentation package, and Oxxi/Aegis' *Presentation Master* – a much-needed object-oriented business presentation tool for the Amiga, which is similar in capability to Aldus *Persuasion* on the Mac.

USA AMIGA PRICES SLASHED

And now for some good news – Commodore US has shaved pricing on the Amiga 2000 and 3000 series by between 10 and 26 per cent in a bid to make the machines more price competitive. The A2000 drops 16 per cent – down to \$1,599 – while the A2000HD falls by a full 26 per cent down to \$1,999. The A3000 Model 16/50 falls the least – by 10 per cent to \$2,999, while the Model 25/50 has been shaved 12 per

cent – down to \$3,499.

TANDY'S \$199 DOS COMPUTER

In a US bargain-bin sale, Tandy has cut pricing on its 1000HX PC to just \$199 – the machine is a complete PC in an Amiga A500-style casing, complete with DOS in ROM, a floppy drive and built-in *Personal Deskmate 2* software. The only thing missing from the package is a monitor, which Tandy will sell you for as little as \$60.

Tandy UK is still charging around 300 pound notes for the machine. But if it's being phased out in the US, it's a fair bet that it's not long for UK consumption either. Watch this space.

As if a \$199 PC wasn't enough, Tandy has also storm-trooped in with a sub-\$400 CD-ROM drive. The CDR 1000 unit is supplied as a direct replacement for a disk drive on a PC and loads like an audio CD system, with disks slotting into a tray that rolls back into the main casing, just as on an audio unit.

No disk caddy is required, as with competing systems, so what's the catch? Well, the drive isn't the fastest on earth, nor does it have a fast data transfer rate – 150K per second is the best it can manage. Still, the \$399 price tag for the hardware includes an 8-bit interface card for the PC and driver software, as well as all the necessary connections.

HP AND LOTUS ALLIANCE FOR POCKET COMPUTER

Reports from the US suggest that Lotus is working secretly with Hewlett Packard to develop the HP 95LX, a palmtop computer in the same vein as the Atari Portfolio. The unit will reportedly contain an appointment calendar, calculator and software to maintain a complete Filofax-style diary system. ROM cards are the order of the day for storage. The machine is being readied for a summer launch with a target price of \$695.

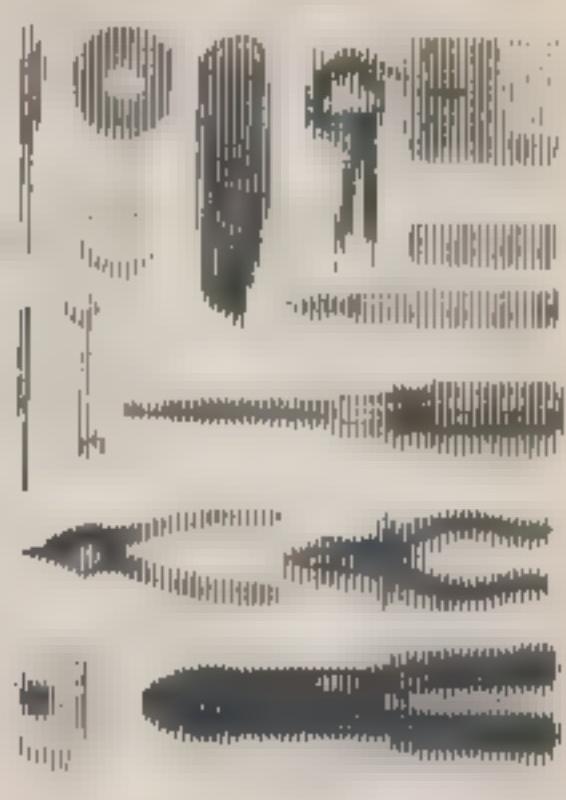
MAC PRODUCTION UP BY 30%

A former Data General plant in Colorado Springs that has been on the market since 1989 has been purchased by Apple Computer in response to the increased demand for its new line of low-cost Macs. The 340,000 square foot facility becomes Apple's fourth plant and will require between 800 and 1,000 people to run.

Apple currently has production facilities in Fremont, California, Cork, Ireland and in Singapore, so why the expansion? According to Apple, the plant became necessary when, even after extending the Singapore and Cork plants to round-the-clock operations and airlifting Mac Classics in from Singapore on almost anything with wings, including planes from Aeroflot, the Russian airline, it proved impossible to satisfy the massive demand for Macintosh computers. ■

CIRCUIT CITY

Building a NICAM TV tuner/decoder sounds like a tall order, but fear not – Keith Pomfret and Michael Stirling put on their platform shoes and rise to the occasion.



When Circuit City recently found the Amstrad MP3 TV tuner alive and well in Shropshire, Scart monitors suddenly became TV sets and TV detector vans were seen buzzing around wherever there was a computer to be found.

It was a useful idea, and a pleasant reversal of the more normal use of a TV as a monitor. As the 90s progress all kinds of media are merging: computers are being used to control CDs, sound and vision are digitally encoded and genlocks are combining computer output with video and broadcast signals.

But while we're waiting for the broadcasting giants to decide on which wide screen TV standard they are going to throw the corporate weight behind, we've at least got NICAM stereo sound.

NEW SOUND FOR OLD

If your current TV doesn't have NICAM, you don't want to trash it for a new NICAM one, or if you've a Scart Computer monitor that you'd like to use as a second TV with digital sound, the Maplin NICAM Tuner system is probably ideal for you. It's a comprehensive kit that contains all of the parts to build a NICAM Stereo sound decoder, a TV tuner and multiple outputs.

It is possible to build the unit a module at a time to save cash but, if you can afford it, £139.95 will provide you with a black box that takes the incoming TV signal, strips the encoded NICAM signal from it and can

output that to Scart, Phono and DIN connections.

The video element is available as a modulated signal, a composite video signal or via the Scart output. An advantage of these video and audio outputs is that the Maplin NICAM unit is widely compatible. But important to many builders is the tuner element replicating the tuner of a colour TV. The benefit here is that the Scart output can be used to feed a monitor that conforms to the Scart standard. Thus, the monitor on your Amiga, Arch, ST, or even CPC may display TV programs.

To make best use of the unit's ability to decode the NICAM signals, you'll need some sort of stereo or hi-fi. It's perfectly possible to feed the digital stereo signals into a Scart monitor with sound capability, but to appreciate digital spatial stereo a better system is called for.

The two uses that we put the NICAM decoder to were as a second TV via the Amiga, and as a way of using the expensive B&O hi-fi in the lounge to add surround-sound digital stereo to last year's almost new FST television. In the case of the Amiga, we tried connecting the NICAM decoder to a stereo Scart monitor and making the audio connections to the monitor. Sitting close to the screen as one would when working at the keyboard, the spatial effect of the digital sound was apparent but sitting further away for normal viewing, a different solution was called for. A pair of bookshelf speakers

and a mini stereo amplifier from Tritologic were the answer and in a small room (3m x 3m) the new TV Amiga with digital sound brought a new level of entertainment to the computer.

On a more serious computing level, the digital output meant that digital sampling could be taken straight from a broadcast signal without the hiss that normally accompanies TV broadcasts.

The only down side of that is that TV broadcasts carry copyright and you should get permission before sampling them in the same way that you'd get permission if you wanted to sample Madonna's latest offering.



• The NICAM TV tuner/recorder. A black box that wouldn't look out of place beside your stereo, but which can turn your scart monitor into a TV – but don't forget your licence.

The addition of a genlock to the system meant that it was possible to combine video, audio, text and picture files to produce an interactive database where all of the sources were either digital or digitally processed.

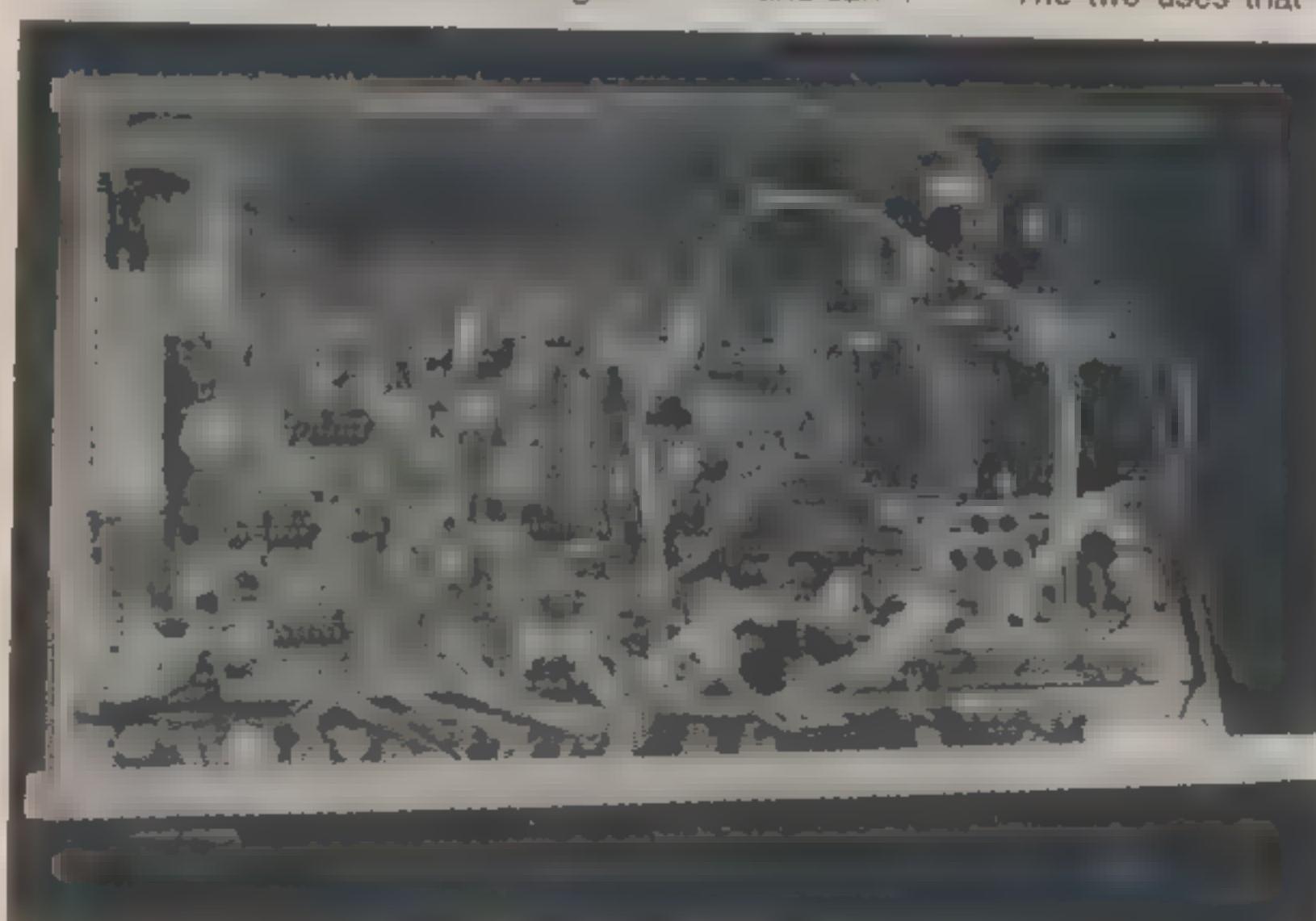
In the lounge we aimed for leisure. Here we wanted the current TV to be enhanced with NICAM digital sound. The four speaker Hi-Fi was attached to the decoder unit and the speakers re-positioned to make the screen the focal point of the room. Result, TV programs enhanced with digital sound and movies that make the cinema redundant.

The unit's enhancement of audio signals made

THE BUILD UP

Michael spent a week of his spare time turning the heap of components into a fully functional NICAM tuner and decoder. This is what he found:

- The documentation could have been better; but with the help of the Maplin constructors magazine, I was able to complete the kit
- A little confusion was caused by the inclusion of resistors of both old and new colour codings but the constructors guide did explain the colour coding.
- During construction I worried about dull solder joints. When I switched from Ersin to Tandy solder the problem went away. The reason? Ersin solder is 60/40 per cent lead to tin; Tandy is 60/40 per cent tin to lead.
- General component quality is good. The PCBs are of high specification although C17 and C18 (display PCB) had holes too closely spaced for a good fit.
- I enjoyed building this kit and burned quite a lot of midnight oil to complete it in a week. Not for the beginner and full use of diagnostic tools and equipment was needed to test the various sections. As well as tools for construction, a digital multimeter, an analogue multimeter and an oscilloscope were used for diagnostic checking and tuning.
- Total time spent on the kit 25-35 hours including diagnostics. Difficulty, fairly hard.



• After a week's worth of midnight oil and elbow grease on a project rated 'fairly hard' the inside story - a well laid out, internal design.

SHOPPING LIST

- NICAM kit from Maplin, price £139.95 – or call them on 0702 554161
- Other peripherals can be obtained from Tritologic on 0274 678062
- Expensive Hi Fi and TV from Bang & Olufsen, somewhere in Scandinavia
- Genlock from HB marketing on 0753 686000
- House containing small room originally acquired from Barratt Homes



With a view to expansion, ICE Software is looking to recruit experienced

**PROGRAMMERS
GRAPHIC ARTISTS
GAME DESIGNERS
MUSIC PROGRAMMERS**

with at least one previous product to their credit, for work on Amiga, Atari ST, PC and compatibles, Commodore 64, Spectrum and Amstrad computer formats

Contact: Martin Kane,
ICE Software, 244 Bath Street,
Glasgow, G2 4JW
Telephone: 041-332 9007
Fax: 041-332-8986

D 0 MARK

Domark requires a CDTV programmer! One who is experienced in "C" and Assembler and has experience in programming on the Amiga using the operating system.

Start date is immediate.

Contact:

*Russell Ferrier or Colin Boswell
on 0932 821357, by telephone
or by fax on 0932 821358*

WANTED YOUNG GUNSLINGER

Due to expansion of our evaluation and customer service facility, we're hiring!

Work is dawn to dusk (Mon - Fri) and way out West (London).

The successful guy or gal should know a low-down 2 bit game from a root'n'tootin' 16-bit, be fast on the fire button and know all the new games in town. This one-tough hombré should be able to read smoke signals and deal with customer 'phone queries.

**Call or write to Ian Mathias at Virgin Games for further details:
16 Portland Road
London W11 4LA
071 727 8070**

Development Teams and Programmers

The Sales Curve's fast growing software label **STORM** wants top quality Development Teams and in-house programmers to code its future releases.

The company that produced Silkworm, The Ninja Warriors, Saint Dragon and SWIV is seeking third party development teams, freelancers and in-house programmers to produce computer conversions of Big Run, Rod-Land and Double Dragon III, as well as original designs for various non-arcade licenses and console projects.

If you have a proven track record on Amiga, ST, C64, Spectrum, Amstrad, Nintendo or Sega, contact:

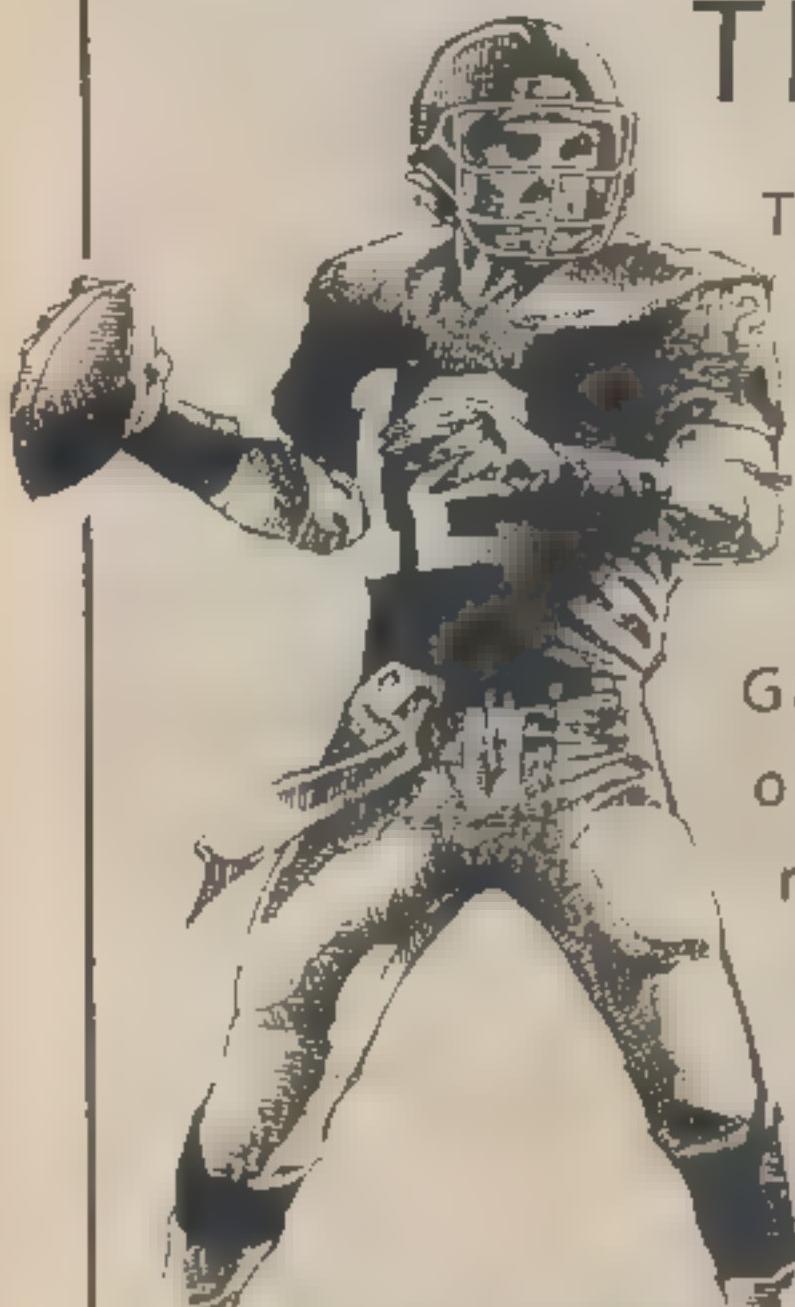
THE SALES CURVE LTD

**Unit 17, 50 Lombard Road,
London SW11 3SU**

**Or phone the Development Manager,
Rob Henderson, on 071 585 3308**

ACME INTERACTIVE INC

The people behind Cinemaware



The creators of such trendsetting hits as **Wings, It Came from the Desert, Rocket Ranger** and the **TV Sports** range have opened a new video console development group in sunny Southern California (7 miles from Malibu). Join a hand picked team, which includes fellow British programmers Brian Howarth (Theme Park Mystery) and Andrew Green (Impossamole, Dangerous Dux), in developing the next generation of games for the Super Famicom and Sega Genesis. Qualified candidates must have proven game development experience in 6502 and/or 68000 assembly language. Prior console experience is a strong plus. A University degree is helpful but some college is mandatory. Compensation includes salary, benefits and royalties, and all relocation and U.S. immigration expenses will be paid. Interviews will be held in London on Saturday 13th April and Sunday 14th

April. Interested candidates should respond immediately

via post or fax to:

Bob Jacob, President, Acme Interactive Inc.

2660 Townsgate Rd, Suite 740,

West Lake Village, California, CA 91361

Tel: 0101 805 495 512 Fax: 0101 805 495 8048

All replies will be held in strictest confidence



WESTONING LTD

STOCK CLEARANCE - EXCLUSIVE TO NCE READERS
ONE WEEK ONLY - WHILE STOCKS LAST!

3 1/2" DS/DD

100.....	£33.00
250.....	£75.00
500.....	£135.00
1000.....	£260.00
40 box.....	£4.00
80 box.....	£4.50

KAO
BRANDED
MF2DD
10's
£5.75

AMIGA

A1500.....	£699.00
A500.....	£299.95
3 1/2 drive.....	£50.00
1 1/2 meg clock..	£94.00
1 1/2 w/o clock ...	£90.00

STAR

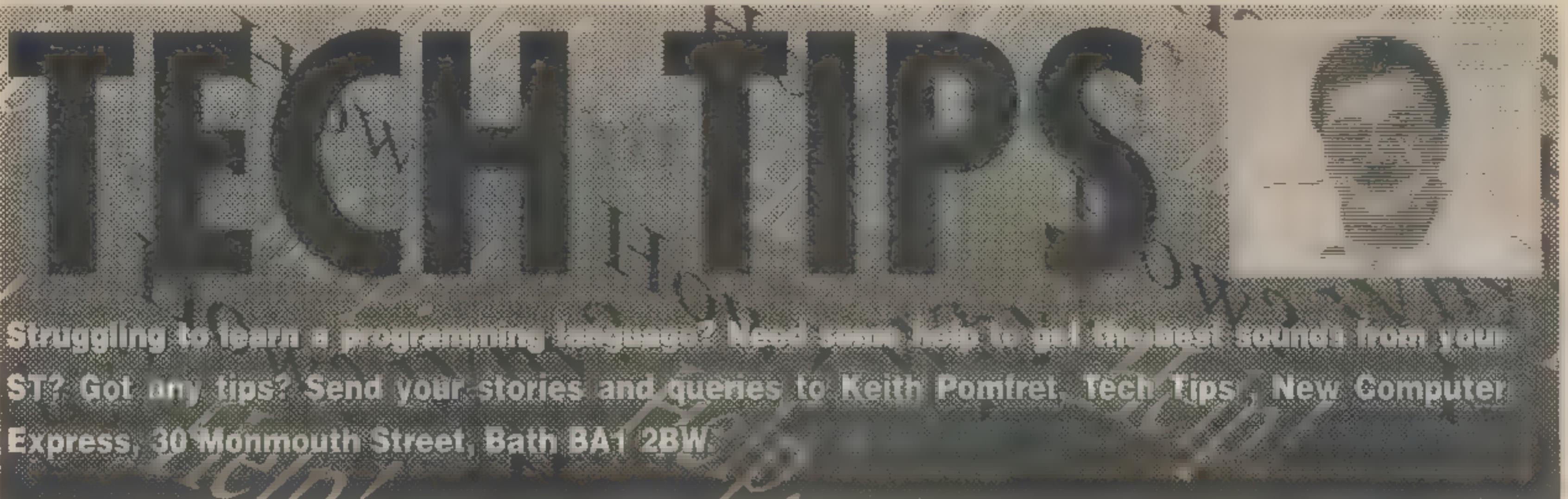
LC10	£145.00
LC24-10	£180.00
LC24-200	£227.00
LC24-200 col....	£275.00

PRICES INCLUDE VAT AT 17 1/2% AND POST. ADD £9.00 NEXT DAY



WESTONING LTD. NCE OFFER
12 SANDERSON ROAD, WESTONING,
BEDFORD, MK45 5JY
TEL: (0525) 718668/(0836) 775060





Struggling to learn a programming language? Need some help to get the best sounds from your ST? Got any tips? Send your stories and queries to Keith Pomfret, Tech Tips, New Computer Express, 30 Monmouth Street, Bath BA1 2BW.

■ HELP! BASIC database

I have struggled for a couple of years to write a database program for my PC. I learned computing on a BBC B which had the BASIC language on a ROM, so this is the language that I feel comfortable with.

I want the database to record the details of members of a computer club of which I am the secretary. The problem is that as I get the program to work, I dream up another utility that would make it better. I'm on Version 12 now and being realistic, the program is never going to get to the stage where it works 'properly'.

All of the bolt-on loops and routines bring with them a time overhead and it can take half a minute to dig out a record. I now realise that I have a couple of alternatives: I can either learn a new language or move on to using a commercial program.

I was against the idea of a new language but we're changing the computers where I work from PCs to a mini system and there are a couple of originals of *RapidFile* going free with original disks and documentation.

What I need you to tell me is, would *RapidFile* do the job for me and is there any way of speeding up my program without learning a new language?

John Fetter, Dulwich

If you want to take the easy way out, *RapidFile* will certainly do the job. It will run on any true XT or AT clone and offers features that will hold your name and address lists, mailing labels, checks, calculations, inventory, form letters, accounts and reports.

To help you even further, there's a spelling checker and a thesaurus. If there's an original going begging, grab it with both hands. *RapidFile* comes from Ashton Tate (the folks responsible for *dBase*) and will be worth its weight in gold to you.

If you want to speed up your own program, print it out and take a long look at it. BASIC programs become clumsy and cumbersome when you add bits as you need them. It may be that you've done the same sort of routine several times in the program. Perhaps you can combine several routines into one module - which should make the program more compact.

You didn't say which dialect of BASIC that you're using, or whether it is

compiled or interpreted. If you are using an interpreted BASIC, get hold of a compilable BASIC, make the necessary dialect adjustments and your program should run a good deal faster once compiled to code instead of being interpreted an instruction at a time.

■ HELP! Amiga s-s-samples

I have an Amiga 500 with 1Mb and an extra drive. When I bought it (second hand) it came with a piece of software called *Audiomaster II* which is a sampler and player. There are a few demos on the disk and I am impressed enough to want to try sampling myself.

A friend has offered me the Trilogic Mk 2 stereo sampler and I want to know whether this will work with *Audiomaster*. I also want to know if I'm breaking the law taking samples from my CDs. My Dad says I am (he's a stiff) but my Mum says if I only do it for my own fun, no one will know and it doesn't matter.

Mike Brough, Coventry

The Trilogic Sampler will work with your *Audiomaster* software. Incidentally there should also be some sampling software with the sampler hardware. It's quite basic but it's good fun and an easy way to learn about sound manipulation.

There's also a new version of *Audiomaster* out - *Audiomaster III* is everything that its predecessor was and more besides. If you want to get hold of a copy of the latest version, give Silica Shop a ring on 081-309 1111.

To address your other question, sampling copyright material without permission from the copyright holder is theft. It's no different from any other theft. By sampling other people's work you potentially deprive them of the benefit (financial or otherwise) of their own work.

Having said that, I'm sure that everyone that has ever played with a sampler has fed something commercial into it if only to find out what Madonna sounds like backwards. The harm isn't done by the occasional giggle caused by manipulating a well known sound but by the danger that people will pass off other people's work as their own. The golden rule has to be: If in doubt, don't.

If you are going to sample sound, why not try to be original and look for

new sounds instead of borrowing other people's. This isn't as difficult as it sounds. With a cheap (£20) microphone and a tape recorder, I went out to look for sounds and came back with some quite splendid noises. Perhaps the best was a slapping bass guitar sound that was made by plucking the alternator belt of a 38 tonne Foden truck with a tyre iron and then manipulating the frequency and content in a sampler. This may sound like an extreme example but it serves as proof that there are plenty of usable sounds out there without borrowing someone else's.

■ HELP! Flat ST

What are flatties in my ST? I was hoping to upgrade the RAM from 512K to 1024K but the shop I took it to said that it is a nearly impossible job because the memory is made up of flatties. I have searched the manual and can find no mention of this.

I've since found a company advertising in a magazine that will do a memory upgrade to any ST but before I send it off, I want to solve the flatties puzzle.

Neil Beecham, Maidenhead

I think that the flatties that you refer to must be surface-mounted chips. These are attached directly to the circuit board instead of being attached by legs into sockets. As there are no sockets, your local dealer probably thought that the job would be too much hassle.

It shouldn't be too difficult though. There are several companies specialising in ST memory upgrades. One of the simplest routes is via a flat circuit board that fits over the memory management unit in the ST and allows the memory to be upgraded to 1Mb.

If you are competent with a screwdriver and you don't mind waving bye-bye to any remaining warranty, you could always get the board from Third Coast Technologies and have a go at fixing it yourself. Only do this if you are confident of your abilities though. Don't risk a good computer to save a few quid. Third Coast is on 0257 426464.

■ HELP! PC gamer

What do I need to plug my joystick into a PC? I have an IBM XT clone and an Amiga

and a couple of joysticks. Most of the Amiga games only use one joystick at a time so I may as well have the other one attached to the PC. The XT has no joystick socket but most of the PC software can use a joystick so how do I plug one in?

Ade Walker, Newcastle upon Tyne

First the bad news. The joysticks that you use with your Amiga are a different sort to the ones used with a PC and won't work with it. The joystick used by the Amiga and most other computers is digital. That means that as you move the stick to one of the positions, a switch closes and makes a circuit that can be on or off.

A PC joystick is analogue. A couple of potentiometers measure the changing signal across the X and Y axis of the device and from their output the PC can work out the exact position of the joystick shaft. This is a more accurate, but more complicated system.

In order to interface your PC with an analogue joystick, you'll need a Games I/O card. This is generally a half- or one-third-length card with the necessary 15D socket for an analogue joystick.

Now the good news. It needn't cost an arm and a leg to set your PC up for joysticks. A games card can cost as little as £12.50 (All Formats show recently) and an analogue joystick can be had for about £20. And of course you could keep an eye on the *Shopping Express* reader ads for a good deal...

■ HELP! Amiga soundcard

Although the Amiga has undoubtedly the best sound of any computer, it can still be limited if in use as a sound module for MIDI. Is it possible to buy the Checkmate 1500 or Bodega Bay and a bridgeboard, could I run the Roland LAPC1 soundcard or is there a simpler way to achieve this result? It seems a bit expensive but it's what I want.

Tim Emmanuel, Golders Green

A much simpler and much easier way to achieve the same result is to attach a standard MIDI interface to the Amiga and then add a sound module to that using standard MIDI cables. The LAPC1 is a PC card with the sound capabilities of a Roland MT-32 sound module. You can generally buy an MT-32 fairly cheaply

second hand, which would get you where you want to be hardware-wise.

All you'd need then would be some decent MIDI software and you'd be set up nicely. Your interface could cost you anything from about £20; a decent suite of MIDI sequencing software can be had for under £100 (try MRS from Doctor T) and the MT-32 shouldn't set you back more than £100.

To do it the way you'd planned would cost you over £1,000 in hardware and software and you'd be no better off so far as sound goes.

■ HELP! What's in a name?

I heard that it's possible to replace the nasty 9-pin printer of a PCW with something a little better. An article in a PCW mag showed a PCW with a Star 24-pin printer attached. Is it possible to go a step further and run a laser printer from the PCW?

In the office where I work we have two laser printers (Epson) and these are shared by five computers. I noticed that a spare 'spur' under my desk seemed to be part of this set up. On asking, I was told that there used to be six computers attached to the printers. The set up involves a manual switch box - before you can use a printer, you have to switch it to your computer. The laser printers are used in Epson emulation mode and no-one would mind if I were to add my PCW to the office printer system.

I use Protext CPM on the PCW and I'm sure that this can be configured to drive an Epson printer.

May Vale, Truro

You will need a parallel interface on your PCW in order to connect it to the Epson laser set-up, but other than acquiring that

bit of kit, the rest should be plain sailing and completely free!

Of course, you'll need to configure Protext so that it knows to drive an Epson Printer instead of the Amstrad nasty ninepin. Instructions on how to do this are in the *Protext* manual.

The parallel interface connects to the PCW via the edge connector at the rear of the monitor cabinet, and a standard parallel cable will connect the interface to the printer. Set the switch box to your spur and you'll be printing crisp laser copies from your PCW.

■ HELP! Amiga sound

After a year of eye-screwing-up we've graduated from a TV to a monitor for our Amiga A500. Following your advice some time ago, I purchased an Amstrad monitor from the Amstrad CPC series and my pictures are much clearer. Unfortunately, the monitor has no sound and although we've successfully connected the twin stereo phono outputs on the Amiga to the Hi-Fi, Dad doesn't like *Outrun* through his precious Bang and Olufsen.

Is there a purpose made mini stereo for the Amiga or can you suggest an alternative approach?

Tracey Laing, Telford

There are several companies advertising stereo amplifier and speaker add-ons for the Amiga. For a ready-made solution you could contact Trilogic on 0274 691115 - they do a teeny amplifier and a choice of either car-type stereo speakers or rather elegant bookshelf speakers.

If you want to mix and match yourself, try your nearest Tandy where they do a wide variety of amplifiers and speakers that could be adopted for your system.

■ HELP! Warranty worries

I was asked by security at Heathrow to open up my laptop so that they could check that I didn't have a Semtex battery. I argued and was allowed to prove that I worked by loading up and running some software from the hard disk. The thing that worries me is that as a regular traveller, I often take a laptop on a plane to work with. So far, it hasn't got as far as total disassembly but one day soon it may.

If I am forced to take the lap top apart to satisfy the curiosity of security men, will the warranty suffer? Will the manufacturer refuse to look at the machine if it has been tampered with in this way?

Gus Chandri, Birmingham

There's no simple answer to this - it all depends on the manufacturer. In simple terms, if you open up a computer it normally invalidates the warranty. This is a reasonable condition imposed by manufacturers to stop people meddling with the insides of the machine and then getting damage put right for free.

If you are forced to open the machine up, you should contact the machine's manufacturer and dealer as soon as possible afterwards. Explain the circumstances that the machine was opened in and ask them to inspect it and confirm that the warranty won't be affected.

They aren't obliged to do this and will probably charge you for the service, but with lap tops costing up to £8,000, your warranty could be worth a lot of money.

If the machine has only been opened for inspection and no damage has been done inside, there isn't any real reason why they should not want to extend the warranty coverage.

■ TIP! Punch drunk

I took 25 720K PC disks (3.5 inch variety) and using a hole punch, added the extra hole needed to persuade my PC that they are in fact 1.44Mb disks. The hole punch was on the desk anyway and the job took ten minutes. The PC will read and write to ■ but two which give a media error. That isn't much of a penalty when you consider that I've got the equivalent of an extra 23 disks for free.

What annoys me is that I've spent the last two years and a lot of my firm's money buying the expensive disks.

Roland Watkins, Glasgow

You aren't the first and you won't be the last person to realise that a minor modification to a disk can double its capacity. Although you have what seems to be a low failure rate (eight percent) you may find that the failure rate increases. The media on a 720K disk isn't as dense as that on a 1.44Mb disk and people using converted 720K disks have reported a high failure and data-loss rate.

If it is your company's valuable data that you are penny-pinching with, think again. The extra cost of guaranteed 1.44Mb disks is worth paying when you measure it against the cost of losing valuable data.

■ HELP! MIDI compatibility

My son pointed out the MIDI ports on his Atari ST when we planned to buy a keyboard for his sister for a forthcoming birthday. He is under the impression that if we buy a MIDI keyboard for his sister, they will be able to utilise his ST as a multi track recording studio for it. Is this true? He has a sequencer software package that ■ got in the public domain for a couple of pounds. Will this be what he needs?

Ron Bentham, Manchester

He is right. As long as you buy a keyboard with MIDI ports, you'll be able to use the ST and the sequencer to drive it. If you can get a multi-timbral keyboard this will be even better as you will be able to assign different MIDI voices to different tracks.

This means that you could for example record a bass on track one, piano on track two, strings on track three, and a couple of solo instruments on tracks four and five and percussion and effects on the remaining tracks.

You would be able to play back your orchestration in multi-timbral mode playing all of the tracks together.

The other good thing about MIDI is that it's expandable and grows with you. Tracks that you record on a £100 micro-keyboard today will play back on any instrument equipped with MIDI. This means that something recorded at home could be taken to a studio and played back on a £250,000 Synclavier. As your system grows you don't actually lose anything that you have worked on. Your compositions can grow too.

■ HELP! CPC Plus

The CPC Plus seemed like a good logical progression with its cartridge port and, having all of our software on disk, we bought the new machine. I have to say that it's a disappointment.

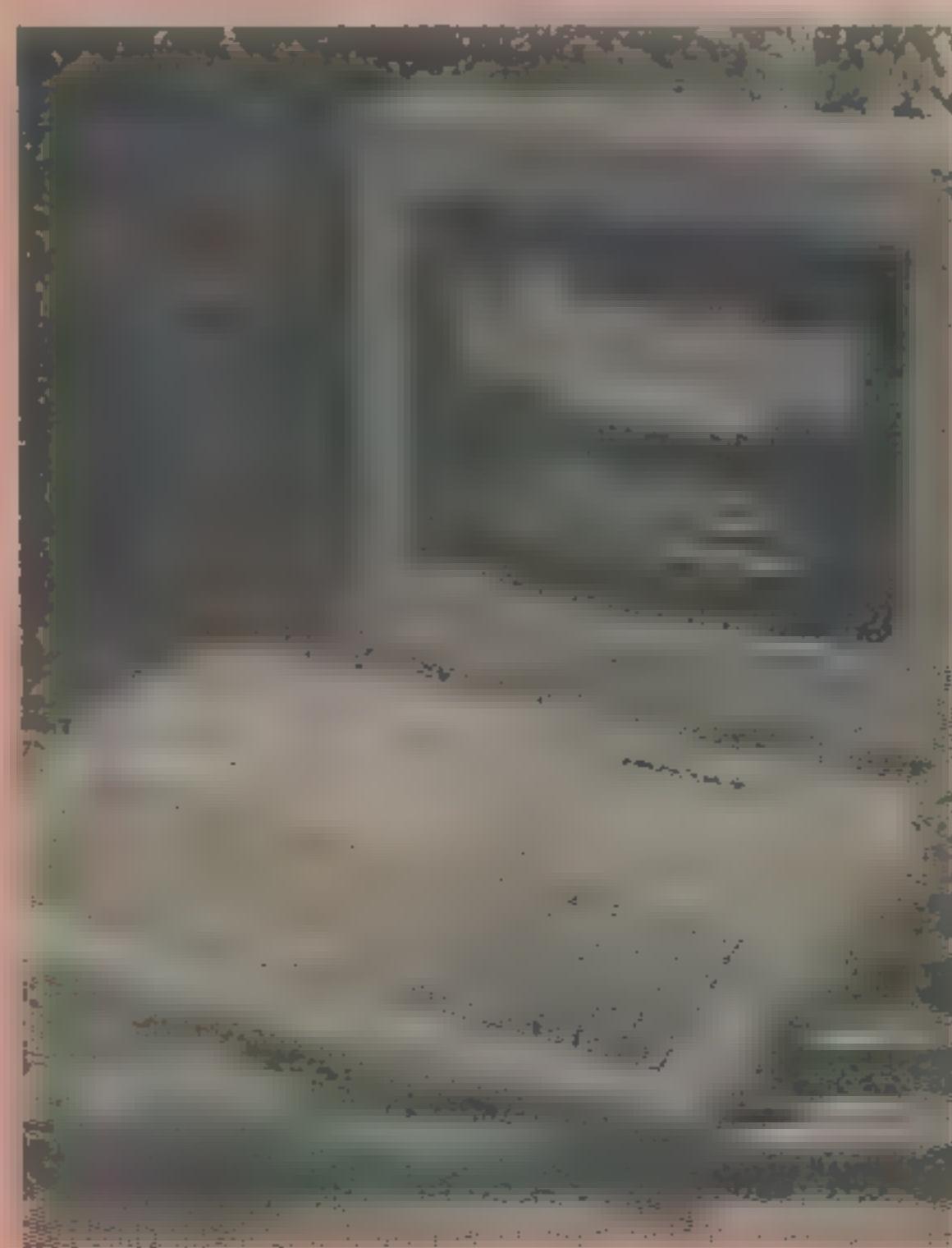
All of the exciting new features only work in the cartridge mode so we haven't made much of a gain on the original machine unless we buy cartridges.

I've learned enough CPC BASIC to write programs for my own entertainment and even taught the kids to play screen spirographs with Logo. I want us to get more out of the machine so it's time to learn machine language or assembler or whatever it is that produces all of the commercial games.

Is there a book which will teach me a bit about low level programming specific to the Amstrad CPC?

There are several books that fit the bill and whichever one I suggest, I've no doubt that someone else will suggest a 'better' one. Still I'll risk that *Machine Code for Beginners* on the Amstrad (ISBN 0-7447-0025-6 at £6.95) should do the job without breaking the bank.

It was written by Steve Kramer seven years ago but for my money, offers a logical well defined approach to machine



code programming. If you have difficulty getting a copy there are several other books that cover programming the Z80 processor of the Amstrad CPC series.

Evesham Micros

ALL PRICES
INC. VAT @
17.5% AND
DELIVERY

Buy with confidence from one of the longest established companies in the field, with a reputation for good service and prices. We have invested heavily in computer systems to enable our Telesales staff to present up-to-date product information, coupled with highly efficient order processing. Our fully equipped workshop enables us to carry out almost any repair on the premises. We're sure that you won't be disappointed if you choose Evesham Micros.

LOOK WHAT ELSE YOU GET
WHEN YOU BUY AN AMIGA
FROM Evesham Micros

Tracksuit Manager 90
Lost'N Maze
Tank Battle

THESE FABULOUS GAMES:
Subbuteo
Discman
Nigel Mansell (1Mb Only)
Treasure Trap
Battle Squadron
Jaws
PLUS! A wordprocessor and spreadsheet

Block Alanche
Diet Riot

AMIGA

SPECIAL
DEALS

AMIGA 500
SCREEN
GEMS PACK

Top-selling A500 package includes
'Night Breed', 'The Beast 2',
'Back to the Future 2', 'Days of Thunder',
'Deluxe Paint II' and TV modulator.

A500 SCREEN GEMS PACKAGE £ 379.00

SPECIAL! A500 Screen Gems Package
inc. 512K RAM Clock Upgrade ... £ 399.00

A500 Screen Gems Package PLUS 3½" Drive £ 430.00

A500 Screen Gems Package Including
512K RAM/Clock Upgrade AND 3½" Drive £ 450.00

AMIGA 500 CLASS
OF THE 90'S PACK

Includes A501 512K RAM Upgrade, TV Modulator, 8 software
Titles, 10 Disks, Mouse Mat, Video Tape and more ...

A500 CLASS OF THE 90's Package £ 549.00

A500 Class of the 90's Pack PLUS 3½" Drive £ 600.00

AMIGA 1500
STARTER PACK

Includes A1500 computer (1Mb RAM, 2 x 3½" Drives, 8 expansion slots),
Commodore Hi-Resolution Colour Monitor, plus Software including: 'Deluxe
Paint III', 'Battle Chess', 'Sim City' and 'The Works' (business software).

AMIGA 1500 STARTER PACKAGE £ 949.00

AMIGA 500 COMPUTER GENUINE U.K. VERSION

Features a 512K Commodore Amiga 500
computer, 1Mb Internal Drive, TV Modulator,
Mouse, Power Supply, KickStart 1.3, etc.

Amiga 500 package as above £ 329.99

A500 Pack as above, with
512K RAM / Clock Upgrade fitted £ 359.99

A500 Pack with external 3½" Drive £ 379.99

A500 Pack with external 3½" Drive and
512K RAM / Clock Upgrade fitted £ 405.00

COMMODORE A590 HARD DISK

Good quality Commodore Hard Disk unit, including its own PSU
and built-in cooling fan. Features sockets for up to 2Mb of on-board
FASTRAM expansion (see below). 80ms Access time, with up to
2.4Mb/sec. transfer rate. Autoboots when used with Kickstart 1.3.

Commodore A590 Hard Drive (20Mb) £ 279.00

Commodore A590 with fast NEC SCSI 40Mb mechanism fitted £ 479.00

Commodore A590 with fast NEC SCSI 100Mb mechanism fitted £ 669.00

A590 RAM UPDATES

A590 RAM Upgrades are
fitted free of charge when
bought with an A590.

512K Upgrade £ 31.95

1MB Upgrade £ 69.95

2Mb Upgrade £ 99.95

Amiga & ST 3½" Drives



- Very quiet
- Slimline design
- Cooling Vents
- Sleek, high quality metal casing
- Quality Citizen/Sony mechanism
- On / Off switch on rear of drive
- Throughport connector (Amiga)
- External Plug-In PSU (Atari ST)
- Full 1Mb Unformatted Capacity
- Long reach connection cable

ATARI ST VERSION :

£ 59.95

AMIGA VERSION :

£ 54.95

5" " External 40 80 Track Drive also available for only £99.00

LYNX Hand-held Games Console

Only £119.95

INCLUDING FREE
'CALIFORNIA GAMES'
MULTIPLAYER
GAMECARD

LYNX GAMECARDS	Electro Cop £19.95	Xenophobe £19.95
	Stimeworld £19.95	Blue Lightning £19.95
	Klax £19.95	Gates of Zendon £19.95
	Roadblasters £19.95	Chips Challenge £19.95
	Paperboy £19.95	Shanghai £19.95
	Rygar: Warrior £19.95	Rampage £22.95
	Zelos Mercenary £19.95	Graffiti 3 £22.95
	Ms Pacman £19.95	

512K RAM/CLOCK EXPANSION FEATURES :

- ★ Direct replacement for the A501 expansion
- ★ Convenient On / Off Memory Switch
- ★ Auto-recharging battery backed Real-Time Clock
- ★ Compact Unit Size : Ultra-neat design
- ★ Only 4 low power consumption FASTRAMs

512K RAM Expansion also available without clock for only £27.95

1.5MB RAM EXPANSION BOARD

- ★ Fully populated board increases total RAM capacity in an Amiga 500 to 2MB !
- ★ Plugs into trapdoor expansion (as with 512K unit) ; connects to GARY chip
- ★ Includes Auto-recharging battery-backed Real-Time Clock
- ★ Socketed FASTRAM ICs for accommodating up to 1.5MB RAM

Unpopulated RAM board with clock	£ 39.95
RAM Board as above, with 512K FASTRAM installed	£ 59.95
RAM Board as above, with 1MB FASTRAM Installed	£ 74.95
RAM Board as above, with 1.5Mb FASTRAM Installed	£ 89.95

N.B. : The expansion board requires Kickstart 1.3 to operate - Kickstart 1.3 upgrade available from us for £29.95

NEW! ST COMPATIBLE REFERENCE HIGH QUALITY SCSI HARD DRIVES

Incorporating high speed, fast access NEC SCSI mechanisms, and featuring ICD interfaces/software, this is probably the best hard disk package for the Atari ST. Available in either 40Mb or 100Mb versions, the mechanisms have an average access time of 28ms and feature data transfer rates of over 415 Kbytes/sec. Package includes full ICD installation software enabling full control over formatting and partitioning of hard disc. Supplied complete with external power supply - beware of other hard disk drives which take their power from the computer!

REFERENCE-40 (40Mb version) £ 399.00

REFERENCE-100 (100Mb version) ... £ 599.00

SCOOP PURCHASE!

PHILIPS 8CM852 PROFESSIONAL



Dont miss out on this exceptional opportunity to buy a top quality, dedicated Medium Resolution Monitor, made by Philips, one of the Industry's leading manufacturers!

14" Colour Medium Resolution Monitor • Dot pitch 0.39mm • Dark Glass screen for superb enhanced clarity & reduced glare • SCART and RGB TTL sockets • Single channel (mono) audio output • Built-in Swivel-base stand

£ 199.00

Inc. VAT, Delivery & cable

Please state either
For AMIGA card
or FST card
when ordering

HURRY WHILE STOCKS LAST!

PHILIPS 15" FST TV/MONITOR

With its dedicated monitor input, this model combines the advantages of a high quality medium resolution colour monitor with the convenience of remote control Teletext TV - at an excellent low price!



£ 269.00

Inc. VAT, delivery & cable

TRUEMOUSE (ST OR AMIGA)

WE GUARANTEE that this is the smoothest, most responsive and accurate replacement mouse you can buy for the ST or the Amiga. Excellent performance, amazing low price!

ONLY £17.95

(PLEASE STATE MODEL WHEN ORDERING)

Evesham Micros

RETAIL SHOWROOMS

Unit 9 St. Richards Road
Evesham
Worcestershire WR11 6XJ
0386 - 765180
Fax: 0386 - 785354
Open Mon - Sat, 9.00 - 5.30

5 Glisson Road
Cambridge CB1 2HA
0223 - 323898
Fax: 0223 - 322883
Open Mon - Sat, 9.00 - 5.30
IBM Dealer • Corporate Specialist

ATARI



'KICK OFF'
WITH THIS
DEAL FROM
**Evesham
Micros!**

FREE WITH EVERY STE/STFM PACKAGE:

- 'Kick Off 2' (RRP: £19.99)
- 'Tracksuit Manager' (RRP: £19.99)
- 'Subbuteo' (RRP: £24.99)
- Quickshot 3 Turbo Joystick (RRP: £9.99)

TOTAL RRP OF EXTRAS: OVER £74.00!

ALL OUR ST prices include mouse, user guide, etc. PLUS 5 software titles, 320K RAM, 1MB RAM, 2MB RAM, 4MB RAM, graphics & sound demos, desk accessories and utilities.

EVESHAM MICROPS PRICE PROMISE - WE WILL BEAT ANY GENUINE ATARI ST PACKAGE OFFER ON A LIKE-FOR-LIKE BASIS

520 STE 'TURBO-PACK'

Includes an Atari 520 STE with 1Mb Drive, joystick, plus a high quality selection of software including:
'Indiana Jones & Last Crusade'
'Blood Money'
'Impossible Mission 2'
'Super Cycle'
'Human Killing machine'
'Out Run'
'Dragons Breath'
'Anarchy'
'Hyper Paint 2' (STE version)
'F1ST BASIC'
'Music Maker 2' (STE version)
'STOS' Game Creator

£359.99 Inc. VAT & delivery

£389.99 WITH 1MB RAM FITTED
£439.99 WITH 2MB RAM FITTED
£519.99 WITH 4MB RAM FITTED

SM124 monochrome hi-res monitor

520 STFM 'DISCOVERY PACK'

High quality, good value package based around the 520 STFM computer including 512K RAM, 1Mb Floppy Drive and built-in TV modulator. Also supplied is:
'STOS' Games Creator • 'Outrun' •
'Carrier Command' • 'Bomb Jack' •
'Space Harrier' • 'Neochrome' •
'F1ST BASIC' • 'Atari ST Tour'
Plus 'Discovering your Atari ST' Book

£269.99 Inc. VAT & delivery

£239.99 WITH 1MB RAM FITTED

£ 109.00

Philips CM8833 Mk.II 14" colour monitor with cable £ 239.00

**1040 STE
'EXTRAS-PACK'**

Superb starter package, consisting of a 1040 STE with an excellent selection of serious/leisure software.

The package includes:

- Kuma Wordprocessor • Kuma Spreadsheet • Kuma Database
- Kuma Business Graphics •
- 'F1ST BASIC' • 'Hyper Paint' •
- 'Prince' • 'STAC' Adventure Creator

£449.99 Inc. VAT & delivery

£529.99 WITH 2MB RAM FITTED

£609.99 WITH 4MB RAM FITTED

ST SOLDERLESS MEMORY UPGRADES

SIMMS RAM EXPANSION SYSTEM

- ✓ Fits ST, STFM or MEGA series machines in minutes!
- ✓ Uses SIMMS RAM Modules for Effortless Upgradability
- ✓ Probably the easiest ST RAM Upgrade available!

Upgrade the memory of your ST in minutes and easily with our new, fully software compatible RAM upgrade board. Designed for pre-STE machines, the unit accepts SIMMS slot-in memory modules, making RAM fitting simplicity itself. No electronics knowledge needed! Available with or without RAM modules. Allows upgrade in stages of 1Mb, 2 / 2.5Mb and 4Mb, as and when necessary. Straightforward installation - full, comprehensive instructions provided.

N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering.

RAM Upgrade with board unpopulated £ 59.95

RAM Upgrade with 1Mb SIMMS module £ 69.95

RAM Upgrade with 2Mb SIMMS module £ 99.95

RAM Upgrade with 4Mb SIMMS module £ 129.95
upgrades a 520/1040 Mega ST to 4Mb £ 284.95

also available

PLUG-IN, SOLDERLESS RAM UPGRADES FOR THE ST

With our compact plug-in RAM Upgrades, you can expand the memory of Your ST to as much as 2.5MB, quickly and cheaply!

Two versions allow upgrade to 1Mb, or 2 / 2.5Mb • Simple, fast and effective RAM upgrade path • Suits any 520 or 1040 ST model (not STE machines) • Requires no soldering or technical know-how

512K VERSION :
UPGRADES ANY 520 ST
TO 1MB RAM

£ 69.95

2MB VERSION :
UPGRADES ANY 520 or
1040 ST TO 2/2.5MB RAM

£ 159.95

PRINTERS

PRICES INCLUDE VAT, DELIVERY & CABLE

IL
Star

EVESHAM MICROPS SPECIAL OFFER -
ALL STAR PRINTERS INCLUDE 2 MONTHS ON-SITE MAINTENANCE

Buying
a Star
LC10?

For a limited time, we are offering the Star LC-10 Mk.II at the same price of an LC-10!

Get the latest faster version for just

£ 159.00

Price Inc. VAT, delivery, cable & 1 Year On-Site Warranty

NEW! Olivetti DM124C 24-Pin COLOUR Printer

Professional Quality 24-Pin Colour Printing - At an affordable price!

Combining the advantages of advanced COLOUR output with the superior quality of Olivetti Professional 24-pin printing, the new DM124C represents excellent value for money! Consistent high quality is assured every time, with no ink excesses or pale lines at any speed. Guaranteed Peace Of Mind, with Olivetti's 12 Months On-Site Warranty cover!

200 cps draft, 50 cps LQuality • 7 Colour output; Graphics resolution 360 x 180dpi • Complete with cable, Colour Ribbon and 12 MONTHS ON-SITE WARRANTY

Olivetti DM124C Normal RRP: £ 389.95 Inc. VAT

SPECIAL OFFER! £ 269.00

INCLUDING VAT,
DELIVERY & CABLE

OLIVETTI OM100S - 9-pin printer, 200/30cps

NEW LOW PRICE! ONLY £ 115.00

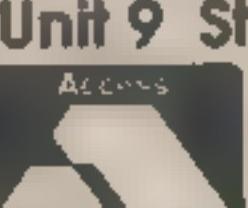
Including VAT, delivery & 1 Year on-site Warranty

Star LC 200 9-Pin Colour, 4 fonts, 180/45cps £ 209.00
Star LC 24-10 24-Pin multifont, 180/60cps £ 215.00
Star LC 24-200 24-Pin multifont, 200/67cps £ 249.00

ALL PRICES INCLUDE VAT @ 17.5% AND DELIVERY

Same day despatch whenever possible. Express Courier Delivery £5.00 extra.

MAIL ORDER DEPARTMENT



Unit 9 St Richards Road, Evesham, Worcs WR11 6XJ

Call us now on 0 0386-765500

Lines open Mon-Sat., 9.00 - 5.30. Fax: 0386-765354
Technical support (open Mon-Fri, 9.30 - 5.30): 0386-40303

Send an Order with Cheque, Postal Order or
ACCESS/VISA card details. Please allow 5
working days for Personal Cheque clearance.

Government, Education and PLC orders welcome
All products covered by 12 Months Warranty
All goods subject to availability, E. & O.E.



Tim Smith's

Write to 30 Monmouth Street, Bath BA1 2BW
(like RAMS to the slaughter)

OPENING TIME



Welcome! Welcome! Forgers, thieves and cut-purses. That's what the news seems to be about at the moment. First we have viruses, then we have crackers, and now we have cartridge counterfeiters. Where will it end? In my opinion the likes of these scum-bums should have various parts of their anatomies inserted into cut-sheet feeders until they promise not to do it again. All right, this sounds a little harsh in the present liberal climate but just look at Revolutionary France in the 1780's and onwards. The guillotine sat there in the centre of Paris doing its business. Were there any computer viruses, hackers, crackers or forgers? There were not! rest my case. Don't get me wrong, I'm not calling for the return of capital punishment for these so-called self-styled 'people' just for little more justice. That's that for now, rant over.

Computer games, now there's another rant which could have been. Did you know that Super Mario Bros has already sold so many copies that everyone on the planet has one even if they don't know it. Go on, look in the bread bin, or under the sofa or behind the dog and you will spot a copy. Secret files downloaded recently show that Nintendo has began a marketing drive on Mars. The theory behind this practice is that if you get a brand name into some one's head when they are young, then you have for them for life. Well it works with the Catholic church. Nintendo's marketing folk decided to take that theory to its limits and as it says in the film: "Getting product awareness instilled into five year olds is effective in the long term. So why not go further and hit a market before it has even evolved". As I write, PR people are sticking speakers which play the theme tune and sound effects to SMBs into pools of primeval slime hoping that this will have a positive effect in the future. Marvellous what foresight can do in it!

CENTREFOLD

A Centrefold Computer Marketing Clever Class: Lesson 1. Selling Yourself

By our media correspondent
Paul Boogle-Bargle-Hogarty

Hi there, Boogle-Bargle-Hogarty's the name and selling's the game. Let's touch base on a few concepts here. Figures suggest that there are now more computers on the market than there are people who want them. This goes double for peripherals, disks, screen filters. This scenario presents a challenge; even on the second hand market, can you achieve 'the sell'? I've been talking to a few people, putting some concepts on the stoop and seeing if the cat licks them up. One of the ideas which was on the hardball-quality upside axis was to have a computer embedded in your head. Shows brand loyalty, shows commitment, shows other marketing people that you will do most things in the cause of 'the sell'. What follows is a look at one man who picked up this concept and ran with it. We will call him Mr X. Will we call the computer in his head, Dick.

As you can see from the illustration, the effect of a computer in the head is quite devastating.

Unhappily, the process can go horribly wrong leaving your genuine attempt at serious marketing looking like a pathetic, absurd, mockery and an insult to the intelligence of the buying public; known in the trade as 'the punter'.

The final pics show what can happen if your marketing cosmetic surgery is carried out by cowboys.

BEFORE (Correct)



• Here we see Mr X with only the merest hint of airbrush surgery. Won't sell many computers that way. But later that same day something happened...

AFTER (Correct)



• Mr X discovered new 'Computer-in-the-forehead' a revolutionary new way to make a mint. Also included in the range ■ Telephone-in-the-skull'

BEFORE (Wrong)



• Here we have a perfectly normal human being. Nothing wrong here, until he went ■ a firm of cowboy marketing cosmetic surgeons in the quest for 'the sell' ...

AFTER (Wrong)



• Oh dear. It's all gone horribly wrong. This man would ■ lucky to sell a £2.50 Mac. Marketing surgery has blown it. From now on, Mr Y will have to live with this image.

GREAT PEOPLE IN COMPUTING

Barry Crambic: Programmer and Inventor

Born: 12/11/31
Died: 12/11/91

Barrington Crambic was a figure of Godhead proportions to many people in the computer world. He made his mark in 1947 when he was found under his bed in Crowthorne asking if the war was over yet. He was then told by his father, a professor of computational coincidence at Bracknell University, that the strange marks he had made on the under-

side of his bunk were in fact ■ major break through in programming. According to the professor, later quoted in his son's biography *Barry Crambic: Genius or Perv?*: "The young lad had made the marks ■ an act ■ creative terror. I immediately recognised them as the basis for ■ portable programming language which I later called PERV (Programming Environment in Relative Variables)."

The basic problem for Barry was that he could only work in war torn areas under his bed, in ■ state of utter terror. This meant that the rest of his creative life was spent in Vietnam, Korea, and Beirut. He leaves behind him ■ bed.

KAO
TDK

KAO MF2DD
1Mb capacity

THE WORLD'S FINEST DISKS FROM T.D.K & KAO SERIOUS QUALITY FOR SERIOUS USERS

BRANDED BOXED IN 10'S WITH LABELS KAO - TDK

Free delivery on orders over £50.

OPENING HOURS
Mon-Fri 9.30am-7.00pm
Sat 9.30am-6.00pm
Sun 10.00am-3pm

NEW LOW PRICES

1 MEGABYTE 3.5" MF2DD BULK 50p each or £24.00 100.
2 MEGABYTE 3.5" MF2HD BULK 75p each or £35.00 100.
KAO MF2DD BULK DISCS & COLOUR: BLUE, GREY, RED, YELLOW, GREEN, BLACK, ORANGE FOR WHITE.

PURCHASERS OF 100+ DISKS: WE WILL INCLUDE A FREE 3.5" DISK DRIVE MAINTENANCE KIT!
DISK BOXES 3.5" 40p each 3.5" 60p each 3.5" 80p each 3.5" 100p each
PRINTER LC-10 Mono £150, Colour £200, LC-200 Mono £200, LC-200 Color £250, LC-200 Color £300
MP DESK JET £600 ONLY £499. All include FREE IBM printer leads
VAT with FREE postage & packing on orders over £50.00. Overnight delivery available.

K.O./VIDEO, 6 & 8 DONCASTER ROAD, SOUTH ELMSALL,
N.R. PONTEFRACT, WEST YORKS, WF9 2YZ
TEL: (0977) 649100 FAX: (0977) 643312

VISA

◆ FOR SALE

2 20 MEG hard drives for PC, + XT controller card. £180 o.n.o. Phone Simon - 021-459-0800 evenings or weekends.

HYUNDAI PC/XT for sale: inc: 20 meg hardcard, 31/2"51/4" disk drives, 640k, RAM, A4 mouse, original software, books, and lots more. Spring bargain at £450 o.n.o. Contact Andy on 0253 724607.

AMIGA 500 with 1 meg upgrade Cumana 2nd drive Rascal U22 modem Amstrad 3610 printer with leads and manuals plus software and joystick £500.00. May split. Phone Tony 0375 380660.

AMIGA brand new 12mths guarantee, screen GEMS pack plus PD. Software all for £250. Ring 081-961-3758 between 10am and 1.30pm only. Ask for Linden. Monday to Friday.

TOTAL PD. Public Domain for the ST. Send a SAE to Chris Palmer, 27 Stanmer Villas, Brighton, East Sussex, BN1 7HQ. We sell, buy and swap PD. Sends us your lists.

COMMODORE 64 software collection (cassette). All £1 each! All originals. Free software with every order! Only one each! First come, first served! Also Vic-20 software. SAE for lists. Tel: 061 737 6912.

3 1/2" Disks inc Labels - DS/DD 100% Error Free - fully guaranteed 2 for 1 replacement

P&P: 50 disks & over is free. Under 50 disks only £1.50 All prices include VAT. Send Cheques or Postal Orders to

KYC Disks

Shop now open: 9 Barmouth Rd. Tel: 081 877 3738
51 Barmouth Road, Wandsworth, London, SW18 2DT.
Telephone 081-870 0469

MEGADRIVE Scart (takes carts) plus nine games and two joypads, including Mickey Mouse, Strider, Magical Hat and Batman, sell for £280 o.n.o. Telephone Martin 0685 76361.

AMIGA brand new 12 mths guarantee. Software including Photon Paint 2, C-Light, 3D animation, demos. £400. Ring 081-961-3758 between 10am and 1.30pm only. Ask for Linden.

AMSTRAD PC1640 ECD SD (360k), mouse DOS, manuals, technical reference, keyboard cover, £425 call Robin: 0273 698059 after 6pm.

AMSTRAD 6128 colour disk drive multiface 2 tapedeck assembler games serious software Firmware guides £300. o.n.o. Tel 041 7766755.

RICOH RP1600 printer DEC RK07 drive TS11 tape deck green screen monitor suit BBC RL02 10Mbyte cartridges plus many BBC shares etc. Offers. 0737 551090.

CITIZEN sheet feeder, good condition, was £74.95 will sell for £30. Ring Wells (0749) 769250 after 5pm. Also looking for good 2nd hand printer £150 tops for Amiga 500.

A500 1meg 2nd drive plus Vortex 40meg HD with leads Ecs ie, Fatter Agnus, for only £450 will split A500: £200 Vortex HD £300. Contact D. Tweedie, Hms Harworth, BFPO ships, London.

HISOFT power basic (Amiga) plus Hisoft Devpac (Amiga) £25 each or £45. The pair both originals. Phone 04023 81033 (Essex).

BRENLEE PD

8 Kings Road, Shepshed, Loughborough,
Leicestershire, LE12 9HT

★ For the best in Amiga PD write for catalogue ★

AMIGA 500, still boxed, over £650 worth of games. 2 joysticks. Immaculate condition. Worth over £1000 sell for only £550. Phone James on (0206) 384019 after 6pm. Thanks.

MAGAZINES for sale ST Action from issue 1, £1 each +p+p. PCW from 1985. £1.20 each +p+p. Also wanted ST PD. Phone 0734 733757 7pm-10pm. Ask for Neil.

APRICOT F1 PC 720k disk drive, 9" monitor, cordless keyboard. Lots of software, and manuals. £120 for quick sale. Phone Jon 081-946-9472 evenings.

NEO GEO for sale with NAM 1975, magician cord, joystick, memory card, power pack (Scart) £400. Call Scot on 0422 206191.

ATARI software Fleet Street Pub 3 brilliant DTP program as new £80 o.n.o. Protect versions, unwanted gift £55. Turbo ST £10. Tel: 031 334 8919.

AMIGA A500, printer, 2nd drive, original software, minigen, modulator etc only £450.00 o.n.o. Also magadrive, Scart, 18 games, 3 joysticks only £350.00 o.n.o. Phone Doncaster (0302) 750262 after 6pm.

DAISYWHEEL printer Silver Reed Exp 600 parallel interface, cables, spare ribbon. VGC hardly used. Around £200 for quick sale. Phone Jon 081-946-9472 evenings.

AMIGA A500, 1meg 2nd drive, modem, two joysticks, loads of PD and a few originals £450. Tel: (0533) 551049.

SONY DISCS

PERFECT FOR AMIGA AND ST

10 3.5" discs only.....	£6.00
25 3.5" discs only.....	£12.50
50 3.5" discs only.....	£22.50
100 3.5" discs only.....	£40.00

ATARI ST PUBLIC DOMAIN CATALOGUE £1.00



10 CHANDLERS COURT
EATON, NORWICH
NR4 6EY
Telephone: (0603) 503382



MANNESMAN Tally printer MT 85 Ex Con £115. Tel: 051 428 5674.

MACINTOSH Microsoft 'Works' integrated word processor, spreadsheet, database and comms. Pack includes 'Quicken' cheque account management programme. Unused with all manuals. £100 o.n.o. Ring Jon 081-946 9472 evenings.

ATARI 800XL with 1050 disk drive and £200 of software, books and cartridges. £165 o.n.o. Atari 1029 Dot Matrix printer £60 o.n.o. or £200 o.n.o. The lot. Tel: 0935 706972.

MAGAZINES (with disks) ST Format issues 8-20, ST user issues 53-61 £1.50 each. Wanted "Mapping The Atari". Ring 0420-88462 or 0822-852796.

AMSTRAD 464 games must be won! Win 40 Amstrad games in a raffle to be held on 15th of April. Tickets 20p each, send name/address/money. 29 Romney Close, Little Neston, South Wirral, Cheshire, L64 9RJ.

ATARI 520STFM plus 1/2 meg upgrade excellent condition. Atari hires mono monitor (sm124) PD software all for £300 o.n.o. Open to offers though for quick sale (reasonable) Tel: 031-334-8919 now.

AMIGA games and PD cheap! From Burmans PD. Almost all games under £10, PD for 40p. Disk and SSAE to. Burmans PD, 41 Pinney Park Gardens, Harrow, Middlesex, HA2 6LQ.

MEGADRIVE games (British) all new. Pace Harrier II, £18. Rambo 3, £18. Truxton £18. Super Thunder Blade £18. Altered Beast £15. or £75 for the lot. 0746 766897.

EPSON PC-E computer, 20Mb hard disk, mono monitor, MSDOS 3.3, user pack, just three months old, boxed as new, £590 buyer collects (Kent), Phone (0795) 872280. Also Nintendo Gameboy as new £50.

SPECTRUM 48K+ including software etc £45 Spectrum 18K+ including software etc £85 two microdrives and 20 cartridges £30 Spectrum books, magazines etc. Phone Steve 081-517-6772 evenings.

ATARI SF314 external disk for Atari ST, all leads, £30 o.n.o. Tel: 041-339-4719.

C64C, 1541/II disk drive, 3 good utility cartridges, two joysticks, loads of disk games, best offer or swap secures. Tel: 041-339-4719.

SEGA Mega Drive with three games only 2 months old. Sell for £140.00 Also PC engine with five cards £150.00. Phone Keith before 3pm after 9.30pm. 051 9312 4673.

AMSTRAD PPC 5125 portable PC, new manuals, leads etc. Never used £250.00. ring Pete Letchworth: 0462 684995.

C128 Personal computer with tape, disk drive, modem, Star printer, expert cartridge and many tapes and disks. £500 or may consider splitting. Tel (0545) 580092 evenings.

ATARI ST originals: Operation Wolf, Falcon, Outrun (with soundtrack tape), Where Time Stood Still, Marble Madness, Elemental. £5 each (all boxed). Phone Steve 0530 243096.

FOR SALE Atari ST FM discovery pack, standard pack, o.n.o. £250. STOS, first basic Neochrome and 4 games (Carrier Command, Space Harrier, Outrun Bomb - Jack) + joystick and more games. Tel Oxford. 243365. Azeem 4pm-9pm.

ATARI ST originals for sale, Virus Thrust, Elite, Lancaster, Star Archipel, Goldrunner, Cards, Chamonix Challenge, £5 each. Also PD wanted. Phone Neil. 0734 733757, 7pm-10pm.

ST ORIGINALS - for sale due to timewasters many at £2.50. Also PD library (300+) disks £200 - mastersound sampler £15 midi contacts wanted. Phone 0742 425525 (Ian).

ST 520 upgraded to one meg memory, one meg Cumana drive massive software collection, joystick, bound magazines, many many extras £375 for further information. Phone 0482 571088 ask for Steve.

DELL Dell system 220 IBM 100Mb hard disk VGA CO 1.48Mb inc colour monitor, DOS PAC plus original manuals £2299. Excellent condition 081 459 8800. Ask for Martin O' Donnell between 10am to 7.30pm.

AMIGA games: Stunt Car Racer, Xenon, Lemmings etc. All boxed and original. Many more. All £8. Phone for full list: 0825 790452.

C64 for sale data corder £300 worth of software incl, Batman and Robocop, Basic and Graphics pack plus mini office, all worth £440. Sell for £100. Tel 0926 613157.

ATARI 800 48k, with cassette games and 6 cartridge games, including Frogger, Donkey Kong, and Moon Patrol £50. Tel: after 4.30pm Simon 081 337 9474.

AMSTRAD GX4000 plus Burning Rubber, Switchblade and Robocop 2, £100. Spectrum +3, data cassette recorder and selection of software £150. Contact Nigel on (0495) 214825.

SEGA megadrive games. Thunder Force 3, Shadow Dancer, Aero Blasters, Strider, Golden Axe, Cyberball, Rainbow Island, Sword of Sodan, Esliat, Super Monaco. Sell for £5 each or swap. Telephone: (0302) 344529.

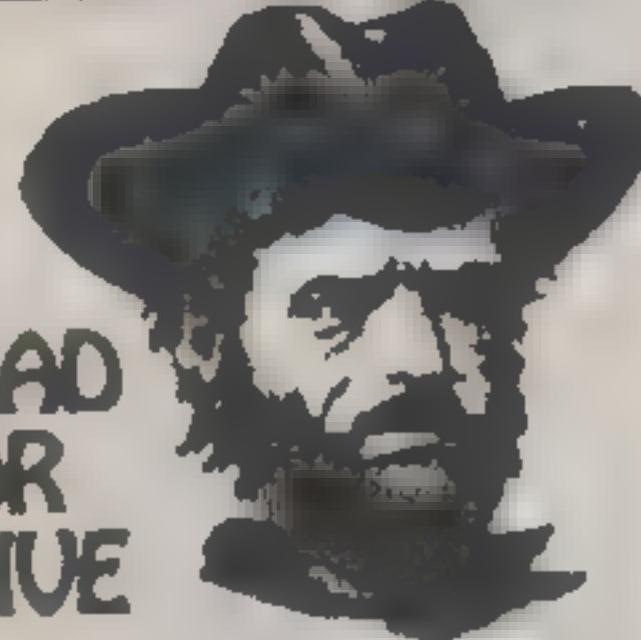
AMIGA 500 for sale. 1 meg upgrade, lots of software including Midwinter, Powermonger etc. +sampler. Sell for only £300. Also megadrive for sale, bargain at £90. Call Paul on 081 566 7251.

ATARI 520STFM, joystick, mastersound, 100+ disks including many original recent top games, PD software, many magazines. All excellent condition. Best offer over £250 secures. Telephone Steve 091 2724146.

Let this advertising space work for YOU!!
For Only £61

Contact Tim Partridge
on
0225 442244

WANTED



USE YOUR VOICE
TO OUTDRAW THE
GUNFIGHTER

CASH PRIZES

0898 31 35 94

INFOADL PO Box 36 LS1 4TN Call charges 33p Per Min Cheap 44p Per Min All Other Times

C LANGUAGE, Turbo C, C++, Pascal, Turbo Pascal language tutorial disks for 1BM or Clone £9.95 each. M. Din, 4 Trelawney Drive, Tilehurst, Reading, RG3, 5WQ.

ATARI 520STE 1meg memory external drive Blitz Turbo Copier Replay 4 Sound Sampler, Software Batman Falcon etc. Loads Magazines. Sell £450. Contact Andrew Colchester (0206) 864573.

BARGAIN! Spectrum +3 and Amstrad 2160 printer, many games, disks, word processor and two joysticks. All leads supplied. Will split if you're desperate. The lot for £120! Ring 0483 771769.

FOR SALE. Amiga games, Singles A Books, and magazines - Ace, New Computer Express, The Games Machine, Your Amiga, Zero. Contact Andrew Wong, 10 Gerlant, Tywyn, Gwynedd, LL36 9QE. Tel: 0654 711122.

COMMODORE 64C, disk drive, joystick, disk and tape software, magazines, disk notcher: no splitting, quick sale! GEOS, Geopublish, mouse, 512k RAM: £160. 5 Dobson Place, Inkersall, Chesterfield, Derbyshire.

SOME great Amiga originals boxed titles, immaculate condition! Very fair prices, quick answer SAE. 13 Bournville Lane, Birmingham, B30 2JY OR Tel: 021 459 7576. Also fast PD swaps wanted!

PC DITO for Atari ST for sale. Brand new. Still in cellophane wrapper. Cost £79, but will accept £50 o.n.o. Phone Fraser on 031 553 2356 for details.

AMIGA games Drakken, Treble Champions £6 each, Edition One Compilation £9. All boxed. Back issues N.C.E., Amiga computing, Amiga User etc. 65p- £1.10p includes postage. 0703 676949 after 7pm.

AMIGA A500 kickstart 1.3 still as new, boxed joystick and lots of original games only £315 or £350 with 1meg memory. Tim on 081 203 8373 after 6.30pm.

AMSTRAD PC2086 VGA colour 30Mb hard disk, 6 months old. Various software Supercalc Windows Crazy Cans 2. Home use only £750 o.n.o. Tel Aberdeen 0224 696172. Will pay for delivery UK.

SUPERCHARGER, PC emulator for Atari ST with 1meg Internal RAM, and TC. Power which enables you to use the ST's internal RAM. Call Hakan on: 081 533 2188.

AROUND 1000 disks of PD for Atari ST/E for sale or exchange. To retrieve D.S. catalogue disk send SAE and disk to A.U.G. 27 Rosslyn Terrace, Edinburgh, EH6 5AU.

ATARI ST-1meg memory drive. Software includes: STOS, Hard driving, Space Harrier, Colossus Chess X etc. Sell for £280 o.n.o. Phone Chris on: (0603) 715 023.

CITIZEN Swift printer: 14" CGA colour monitor. Amstrad PPC 512D, 6 months old, mint. Up and working as word processor system. All boxes, instructions, guarantees, £665 o.n.o. 071 254 0742.

LOADS of ST software! All originals. Kult, Drakken, Interphase, Castle Master and many more! From £2 - £8. For details send an SAE to: Mike Norton, Colindale Nurses Home, Colindale Hospital, Colindale, London.

ATARI 520 STFM for sale. S/S 1NT. Drive plus around 20 original games, mainly chart toppers. Excellent condition. Well looked after (family friend). Offers around £200. Ring Dave: 0914 430 1719.

AMIGA games for sale: Xenon 2, Lotus Esprit, Ninja Warriors, Super Cars, Black Tiger, Thunder Strike, Voyager, plus others. At most half price each. Ring Trevor on (0934) 833730 after 6pm.

AMSTRAD PC151CM with 51/4" and 31/2" drives plus 32meg hardcard. Comes with MSDOS, DOSPlus, GEM, word processor, spreadsheet, database and comms package plus loads of software £650. Tel: 0214216634 evenings.

MINIGEN Genlock for Amiga. As new, boxed. £75 o.n.o. Tel: 021 421 6634. evening. R5232 interface for Amstrad 6128 £50 (Pace Model). Tel 021 421 6634 evening.

AMSTRAD 1512 double disk drive. Monochrome monitor spare disks, manuals plus Panasonic KX-P1081 printer. All in excellent unused condition. Offers: Stu 081 337 6056. Must collect. Phone after 4pm any day.

COLLECTORS magazines ST/Amiga Format 1-13 no disks plus Amiga Format 1-21 with disks £60 or unregistered Amiga Devpac 2 (new). Buyer collects. Phone 04023 81033 (Essex).

NEW megadrive with cartridges, PAL and Scart inc leads £140. Ring 0420 88462 or 0822 852796.

PD's for just 30p yes just 30p. Send SAE with stamp for a list to: PJ's Demos, 63 Park Lane East, Anlaby Park, Hull, HU4 6TU.

ATARI 520STFM upgraded to one meg RAM one meg Cumana drive mega software collection, Scart, lead, microswitch, joystick bound magazines £375 for further info. Ring Steve 0482 571088.

APPLE ■ Europlus with 1 disk drive works and has DOS 3.3. Swap for BBC 5.25" and 3.5" dual drive with PSU or 3.5" enterprise unit. Call Richard (0573) 26032.

AMSTRAD games inc Big Foot, Paperboy, Haria Attack, Space Hawks, Sultans Maze, Electro Freddy, Roland on the Ropes, Roland in the Caves, and many more. All games £1.00. Phone Keith 890503.

286 EGA PC fitted CO PRO £850 at CGA PC £350 for full details Tel: Gainsborough (0427) 616995. Ask for Stephen. Also DVA 4000 MCA BUS multi media PC card £400.

ATARI 520STE, three months old, £250 Amstrad PPC 512D boxed, one year old, mouse, £350. Both with software. Trying to raise money to start own business, so will haggle with close offers.

SPECTRUM +2 with over £750 worth of software, Timex 2040 printer, two joysticks, many magazines, computer books and all compatible leads. Excellent condition. Only £220 o.n.o. Tel. (0530) 416697, evenings.

FOR SALE Brother 150 boxed nearly new, was £440 plus VAT going for £330. Ring John (day only) 081 876 8261.

SWAP my ST for first PCW offered, must have word processor, spread sheet and database. ST has many top games, get writing now to: Paula, 3 Moorend Avenue, C'Wood, Birmingham, B37 5SD.

ATARI 520 STFM, £400 software, two joysticks, magazines, PD and manuals. VGC, only £270. Tel (0234) 357471 (Nick). Games include, Kick Off 2, Beast, Stunt Car Racer etc.

GAMEBOY for sale, VGC, 7 months old guarantee, 4 games, Tetris, MarioLand, Nemesis, Chase HQ. Also mains adaptor, everything boxed, £80. o.n.o. Tel 0634 863817, after 7.30pm. Ask for Steve.

AMIGA A500 mouse mat modulator power pack 1/2MEG upgrade plus games, still under guarantee. The lot £350 for quick sale, no time wasters please. Tel 445 7200. Ask for Mark after 5.00pm.

TESTBOOM LTD Tel: 0695 571605
286 from £600
ST's CALL
Atari TT's available

HEWLETT Packard H.P. Paintjet colour graphics printer. Brand new still boxed, cost new over £800. Sell for £350 o.n.o. Needs Power pack and cables. Tel. 0279 420979.

AMSTRAD CPC464, colour monitor, disk drive, hundreds of games, manuals, joysticks, fully boxed. Good condition. £270 o.n.o. Tel. Leicester. (0509) 232700, evenings.

AMIGA PD no disk above £2. Phone John between 12am and 7pm at (061) 312257, or write to 21 Lower Careys Road, Limerick City, Ireland. For up to date list.

SPECTRUM plus 2, excellent condition with games. £100. Also AMX mouse, never used. £30, with software, both for £120. Tel Scott Magee. 061 681 8251, evenings. Buyer picks up.

DESVIEW 386 multitasking, multi-windowing control program for 80386 based PC's. Includes Qemm 386 memory manager and manifest memory analyzer. Normally £95 + VAT. For sale £60 including postage. Tel. 0526 53289.

AMIGA 500 1MEG monitor printer Kindwords word processor package, software, 1 month guarantee genuine reason for sale £650. Tel 0582 599761.

EGA colour monitor wanted. PC compatible will pay £100. Phone 091 2372329.

ATARI ST520 + half meg fitted built in PC-Speed for IBM PC Software. Cumana external disk drive, mouse, joystick and loads of games etc £350.00. Phone Justin Plymouth 661786

GENUINE IBM PC 512K memory hard disk maths co-processor, fitted 360K disk drive, mono monitor £275. Tel 081 989 5252.

OLIVETTI PC1 computer 512K memory twin 720K disk drives CGA mono monitor little used £350. Tel 081 989 5252.

BBC B computer and disk drive (single 40/80 track) 05-10-20 DFS 2.2M issue 2, view installed to include B/W 12 inch TV (some software) £290. Tel 051 220 6808

AMIGA demo disks. Coma Acid, Iraq demo, Arnie, Total Re-heat, Fraxion Horror Show + Cronics Neverwhere. Any 3 for £2.50. All 8 for £4. Contact: R Thompson, Mile House Farm, Oswestry, Shrops SY11 4JE.

AMSTRAD CPC6128 colour monitor over £400 worth of games, two joysticks, manual, excellent condition £370 o.n.o. Contact Daniel on Paignton 0803 555571.

WEST LONDON PD

8 Berkeley Road, Hillingdon, Middlesex UB10 9DU

BLANK DISKS

£2.90 EACH

CD'S £3.00 EACH

Orders sent to: WEST LONDON PD.

DEMO'S:

DEM 001 Union Demo
DEM 004 The Cuddly Demo
DEM 014 The Definitive Demo
DEM 182 Union Intro Compilation
DEM 314 Shadow Digi Demo
DEM 245 Delirious Demo 2
DEM 326 The Run
DEM 335 Syntax Terror
DEM 262 An Cool's STE Demo
DEM 266 Automation Intro Comp

DEM 323 Galtan II

DEM 308 Predator Demo

DEM 325 Overdrive

DEM 333 Walker Demo 2

DEM 334 Decade Demo

DEM 340 The Zuul Demo

SLIDESHOWS:

SSP 025 J.M Jarre Album Covers

SSP 027 Page 3 Spec 512 pics

SSP 024 Animals

SSP 060 Pin-Up Girls

SSP 076 Madonna Slideshow

SSP 109 Fractal Slideshow

SSP 106 Paradise Fantasy Pics

UTILITIES

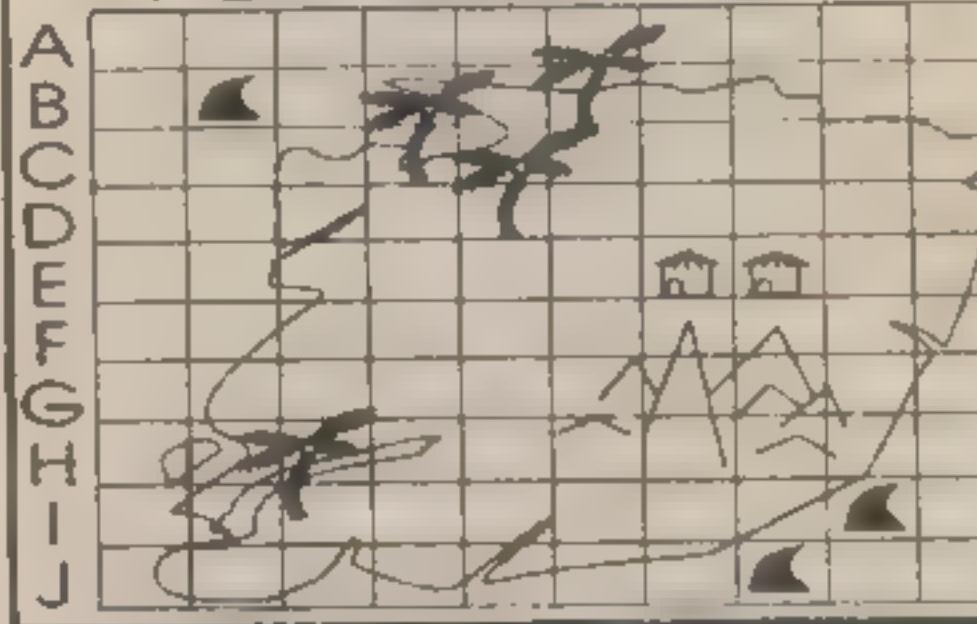
UTI 010 15 Disk Copiers
UTI 050 File Compacters
UTI 022 ZX81 Emulator
UTI 023 Star Chart
UTI 025 Sozobon 'C' Compiler
UTI 097 ZX81 Emulator Files

★ Stockists of Atari ST PD. ★

THE FULL CATALOGUE WILL BE SENT FREE ON REQUEST. TEL: 0895 53521

TREASURE ISLAND

1 2 3 4 5 6 7 8 9 10



CASH PRIZES

USE YOUR VOICE TO LOCATE THE TREASURE

0898 313 1586

Infodial PO Box 36 LS1 4TN Call Charges 33P Per min Cheap Rate 44P all other times

ATARI super charger plus 51/4 disk drive plus Loom, Dragons Breath, Warhead, Immortal for ST and Accolade PC can be seen working £270. Phone Hinckley. 0455 238518.

AMIGA Flight of Fantasy pack, new, boxed £250 includes extra software, joystick, disk boxes, magazines and more items. Extra hardware available if required for. Details, phone Graeme. 0908 661137.

AMIGA 500 1MB, 2nd drive, monitor plinth with extensions, software, joystick, disk box, 20 blank disks, seal 'n' type, dust cover, bargain? only £400 o.n.o. Tel. 0256 63978 evenings.

AMIGA originals. Deluxe paint II, £30. F18 Interceptor £8. Batman the Movie £8. New Zealand story £15. Starflight (Atari version) £7. All inc p+p. As new except for Startflight. Tel. 0362 850325.

CASE communications 4696 9600 Baud modem, high speed 4800 and 2400 fall back rates, error correction and front panel programming includes manual and cables. £250. Phone Graeme. 0908 661137.

Byte Syze

Byte Syze Prices On Those Hard To Find Items

AMIGA/ATARI	
Mouse/Joystick Switches - Auto	£15.50
Mouse/Joystick Switches - Manual	£12.95
Mouse/Joystick Extension Leads	£3.99
4 Player Adaptor	£4.89
3½" Disk Drives 1Mb	£65.00
Replacement Mice	£14.75
Intro To The Amiga Video	£9.99
25 Bulk 3½" DSDD disks inc. labels	£8.50
Atari Lynx (no game)	£75.00
Sega Megadrive (UK) with game	£175.00

GENERAL	
Joystick Extension Leads (3m)	£2.99
Monitor Sharer - Switched	£14.75
Monitor Leads from	£6.75
Printer Leads from	£3.25
Midi Leads from	£2.50
Dust Covers from	£3.50
Amiga Hard Cover	£14.99
KAO coloured 3½" DSDD disks inc	£10.50
Lynx Games from	£25.00
Megadrive Games from	£28.00

Many Many More Items for Acorn, Amstrad, Atari, Commodore and Spectrum Computers

P&P £1.00; except on videos, disks & hard cover, which are £2.00. Cheque (card no. on reverse) or Postal Order with order, payable to:

BYTE SYZE, 23 Porter Close, Rainhill, Merseyside, L35 6PY
Ansaphone 051 426 0138; Enquiries 1700 to 1900. Phone or SAE for FULL list.

COMPUTERS

FOR HOME AND BUSINESS USE (PRICE SMASH)		
Amiga Screen Gems Pack	£339.99	Sega Master System
Amiga Screen Gems	£399.99	Megadrive Master System
1 Meg + Pack	£439.99	Converter
Atari 1040 STE Extra Pack	£339.99	Amiga 1 Meg Screen Gems
Atari STE Turbo Pack	£399.99	160 Paci
Lynx's from ...	£399.99	PCPDS 4833 MK II

PLUS GREAT PRICES

ON PRINTERS, DISK DRIVES, MEMORY UPGRADES AND MONITORS
We also supply Business, Music / Art & Entertainment Software

Mega Deal On PC'S

Tel: SGM ELECTRONICS WIGAN 0942 321435

Now Open

Monday To Thursday 11am - 9pm

Friday To Saturday 11am - 7pm or later

PCW Micro Design Clip-Art, Headline Cuts, Fonts, etc 15 disks £7.50 each or 3 for £20.00. Many other PCW disks for sale phone for list. Tel 061 798 7279.

ST GAMES for sale or swap eg Gauntlet II £5, Kick Off £5, Overlander £5. Also various Atari 8-bit software/hardware. Contact Lee Wheelhouse, 1 Stafford Avenue Costessey, Norwich NR5 0QF.

PC GAMES, Arthur (Infocom), Xenon and Knight Games £20 the lot, will split. ■ original. Tel 0275 856294. Also 3 inch disk drive wanted must be external and in good condition.

ATARI 800XL, XF551, disk drive, 1010 recorder 850 Interface, lots of disks and cassette software, mags and books £225 the lot. Tel 0752 663489.

ATARI 520STFM Plus 1Mb external disk drive SM124 mono monitor, 14" Sony FST colour TV/monitor with Scart input, desk and large software collection £420. Ring Rob on Nottingham 0602 607336.

XT-84 key keyboard £15 also BBC Torch co-processor card with manuals £60 ono, also 20 Verbatim branded disks £18. Phone Dave on 0772 453470 after 6pm.

FOR SALE Spectrum 48K+ computer with games or will split also Acorn Electron with disc drive. For details Send SSAE to Mr G Hartigan, 1 Bosham Close, Lower Earley, Reading Berks RG6 4DG.

ATARI ST software for sale, Superbase Professional as new and unregistered, also Timeworks, K-Resource, Fleet Street Publisher, Blitter Chip. Any reasonable offers accepted call Mitch after 6pm on (0702) 548603.

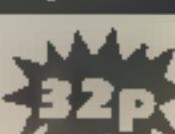
CVLS, 92 Firtree Estate, Thurgoland, Sheffield, Yorks S30 7BG Tel: 0742 884183. Open to 10pm

★ SPECIAL OFFER ★

3.5 inch disks (DS/DD) with labels only
AMIGA PD - ONLY 99p per disk

★ OVER 900 DISKS AVAILABLE ★

Send for catalogue disk - 80p
Mouse Mats - Disk Boxes - Printer Ribbons - Amiga/ST Disk Drives
PHONE FOR DETAILS



ATARI 520STFM Plus 1Mb external disk drive SM124 mono monitor, 14" Sony FST colour TV/monitor with Scart input, desk and large software collection £420. Ring Rob on Nottingham 0602 607336.

SPECTRUM 48K with reset button £50 includes power supply, leads, manual. Phone David on Hassocks (07918) 4530 (West Sussex)

ST ORIGINALS, Prison, Scapghost, Postman Pat, Ballistix, Wierd Dreams, Micropose Soccer, Captain Fizz, Overlander, Space Harrier, Mercenary, Indiana Jones, Graphic Adv, Populous make me an offer. Dave 0634 221966 daytime.

GREAT Amiga games for sale for £6-£12 including all the classics such as Operation Stealth, Future Wars, Xenon II, all games come boxed. Tel David 081 458 0788.

PROTEXT V.5 for Atari ST or STE word processor unwanted gift £75 ono. Tel 0227 768056.

ATARI Mega 4 with fitted AT-speed and QL Emulators plus 150 disks of software and lots of guide books. Will demonstrate all three modes £1050. Tel 081 889 4276 Tottenham anytime.

ATARI Portfolio boxed, as new plus books £160. Phone 0224 875564.

FREE PD?
RING FOR FREE INFO PACK!
WHAT HAVE YOU GOT TO LOSE?

FREEPHONE



0800 252 623

Or (051-924 0200)
(24 HOURS)

Or Post Free To:
UNBEATABLE PRICES,
FREEPOST, LIVERPOOL, L23 0XH

COMMODORE 128D for sale. Runs all 64, 128 + CP/M software with cass and some games + demos on disk £220 ono. Also FM Sound Expander + keyboard £30. Tel 061 740 8188.

AMSTRAD CTM64 colour monitor £70; Tuner (converts monitor into TV) £30, CPC 6128 modulator £5, misc programs, for CPC6128 including pocket Wordstar, Art Studio etc. Tel 0483 33055 (Guilford).

MEGADRIVE with 16 top titles including Golden Axe, Revenge of Shinobi, John Mads Football, Ghouls n Ghosts and baseball, joypad, excellent condition ■ months old, worth over £800 for only £450 ono. Ask for Shaun on 0442 254550.

MEGADRIVE Scart with Shadow Dancer and Mickey Mouse, 2 joypads, excellent condition only £150. 0268 691658.

PROTEK 1200 Modem for Spectrum 48 £12, want manual for C Itoh 1550 printer will pay £5. Phone Mr Jones 03985 438 or write 2 Town Mead, Oxford, Devon EX16 9EW.

AMSTRAD CPC 464, loads to software including Driller, Wec Le Mans, Eddie Edwards Ski, + many more, comes with green screen, MP ■ colour modulator, Konix joystick, books and manuals £175 ono. Tel 0766 830550.

HANDHELD PC Engine GT with Devil Crash £210 boxed, mint condition, also Tiger Hell and Don Doko Don, £25 each or £255 the lot. Phone 0322 863656 Darren.

520 STE, Dust cover, Power Pack, Sim City, Shadow Warriors, Golden Axe, Kick Off 2, Exc Cond. £310. Phone 0942 873838.

OKI Micro line 321 printer for sale, unwanted gift, excellent condition, still boxed, output 300 cps draft, 62.5 CPS NLQ, IBM/Epson compatible rrp over £500. Sell for £295 ono. 091 128K Spectrum with joysticks,

VIGI Plus PC-AT, 80286 processor, 5.25" 360K FFD, 30Mb HDD, Paper white HR monitor, HGA, as new condition full O.U Spec, all manuals, MSDOS 3.3, GW Basic, £850. Tel 051 426 3251.

STAR LC10 II Dot matrix printer. Less than one year old. Boxed, perfect condition £115 for quick sale. Ring Gavin 0602 817198.

CX5M YAMAHA music computer, MSX with full size music keyboard, Midi, stereo output, DX7 voicing software vgc. £100 ono. (0273) 477080.

MINIGEN for sale. Unwanted present yours for only £60 inc P&P. Ring 0670 855371 after 6pm.

520 STE disk drive £200 of software, joystick, mouse, disk box, spare discs £275. Will consider Atari Portfolio, Cambridge Z88 in part exchange. Phone Keith 0245 72889 evenings.

AMIGA games for sale. All originals; ie Voyager, F-29, Dark Side, Mercenary, Imperium, Sim City, etc. Write to Room 503, Northampton Hall, City University, Bunhill Row, London EC1Y 8LJ for prices and list.

The C programming language is called C because it comes after B, a variant of the BCPL language. C was designed and implemented by Dennis Ritchie and initially became popular in connection with the Unix operating system. Later versions of Unix are actually written in C, which should give a clear indication of the power of the language. The compiler written by Kernighan and Ritchie, known as K&R C, was a standard for many years, but there is now an ANSI standard for C, which has been used as the basis for C++, the object-oriented extension to C that we'll look at next.

C is a compiled language; programs are written in source code and compiled into object modules. These are linked to the library routines that are used for file handling and the like, so that the process of program development in a C environment involves an edit-compile-link cycle. The major differences between different C implementations will be in their function libraries, so that calls to these should be the only part of the code that needs to be modified if you move C source code to another compiler.

Comments in C start with /* and end with */, so /*this is a comment*/.

C can seem particularly terse and confusing so, as ever, it is important to use comments to document your program fully, for your own sake.

A C program is made up of several modules or functions and the main body of the program is contained in main. This has the form:

```
main()
{
}
```

The brackets are used for any parameters that the function uses. The braces enclose the main code of the function, which usually begins by declaring variables.

C is a strongly typed language and the type of a variable must be declared when the variable is declared, because the type of the variable determines how much space it takes up in memory. Declarations are of the form: int no_of_characters, no_of_chapters; Variables begin with a lower case letter. You should not use any commands as variable names and as usual, you should use meaningful variable names: no_of_characters is

C SO FAR

These commands are used in the following code to calculate the hypotenuse of a right-angled triangle. The \n command prints a new line.

```
/*to calculate the hypotenuse of a triangle,
with the other two side lengths given by the
user*/
#include <stdio.h>
#include <math.h>
main()
{
    int a, b, sq_one, sq_two, hypotenuse;
    printf("enter the length of the two sides: ");
    scanf("%d %d", &a, &b); /*read in values*/
    sq_one = a*a;
    sq_two = b*b;
    hypotenuse = sqrt(sq_one + sq_two);
    printf("\nHypotenuse is: %d\n", hypotenuse);
}
```

WHAT YOU GET

A good C compiler will offer a programming environment as well as just an implementation of the language; it should provide a debugger to help you correct code, and probably an intelligent editor that will help with missing brackets and the like. Another useful tool is a code animator, that shows a graphical representation of what your code does; for example, how long the program spends in each loop and when it branches from a conditional statement.

AS EASY AS ABC

To use an object-oriented language, you'll need to know a little about programming in C. Mary Branscombe starts at the beginning . . .

better than chno. A semi-colon (;) is used to end every statement in C.

The data types found in ANSI C are: int, integer; short int, an integer between -128 and 127; long int, an integer in a much larger range; float, a number with a decimal point; double, a floating point number with 12 significant digits; char, a character and enum, an enumerated type. Enumerated types are useful for a limited number of constants where the name is important and the value is simply a way of distinguishing the constants. For example:

```
enum days
{Sunday, Monday, Tuesday, Wednesday,
Thursday, Friday, Saturday} yesterday,
today;
```

The days of the week have been used as symbolic constants which have the values from zero to six. We also have two variables, yesterday and today, which can store values of the type enum days. More variables can also be declared if we need them:

```
enum days tomorrow, christmas_day;
```

Variables can be global, local, static or non-static. Local variables are used within the function in which they are declared. Global variables are declared at the beginning of the program or the main function and they can be accessed from any point in the program. Global and static variables have a permanent memory location while local and non-static variables are stored in a temporary stack. The memory used by a local or non-static variable is freed when the program exits from the functions which use them. When a variable is declared, we can give it an initial value:

```
int age_one=24, age_two=27;
char ch_one='A';
```

If no value is given, the variable is initialised with a value of zero. If a variable is given a value within the program, this is done by an assignment statement:

```
int running_total;
running_total = 126 + 50;
```

gives running_total the value of 176.

When we pass a value to a variable, an assignment statement can only be used if we know the value already. If you want to store or calculate with a value to be read from a file or input by the user, things are a little more complicated.

- C offers low-level control—but that doesn't make it impossible to use.
- Many functions are provided in libraries that you can include in your program.
- C can look terse and unfriendly—adding comments will make all the difference.

INPUT AND OUTPUT

A C compiler will not define input or output statements, these will have to be included from the library. The statement used at the beginning of a program to include the standard input and output functions, stdio, which are stored in a type of file known as a header file is:

```
#include <stdio.h>
```

When the code is compiled, the contents of the header file will replace this line of code.

To read a character from the keyboard, or from a file, into the variable ch_one, we use the library function:

```
ch_one = getchar();
```

To print the character stored in ch_two, we use:

```
putchar(ch_two);
```

If we want to output more than one character at a time, we need to format the text and then print it to the screen, using printf, print formatter. There are a number of options to be used with printf, in the form:

```
printf("<output_format>", <variable_list>);
```

For numbers the most useful format is %d, which prints the number in decimal, as an integer. To print out a given string of text, inserting the values of variables from the list, these formatting commands can be placed inside the text string for the output format. So:

```
printf("There are %d characters in the %d chapters of this book", no_of_characters,
no_of_chapters); will print:
```

There are two characters in the 25 chapters of this book assuming the values of the variables are two and 25 respectively.

The string of text enclosed in brackets actually gives printf an address in memory where it can find the text, rather than passing the text directly. To read from the keyboard, we use scanf, scan formatted text, which also needs an address. The format is:

```
scanf(" <input_format> ", <list_of_variable_addresses>);
```

The input format uses the same codes as printf, so that %d expects an integer. Rather than telling scanf what is already in the variables were we want to store what we read in from the keyboard, we need to tell it where to put the information read in. This is why we pass the address of a variable and this is done by using the notation &variable. To get the value of a variable whose address we know, we use *address. To read in two values and store them in the variables a and b, we use the command:

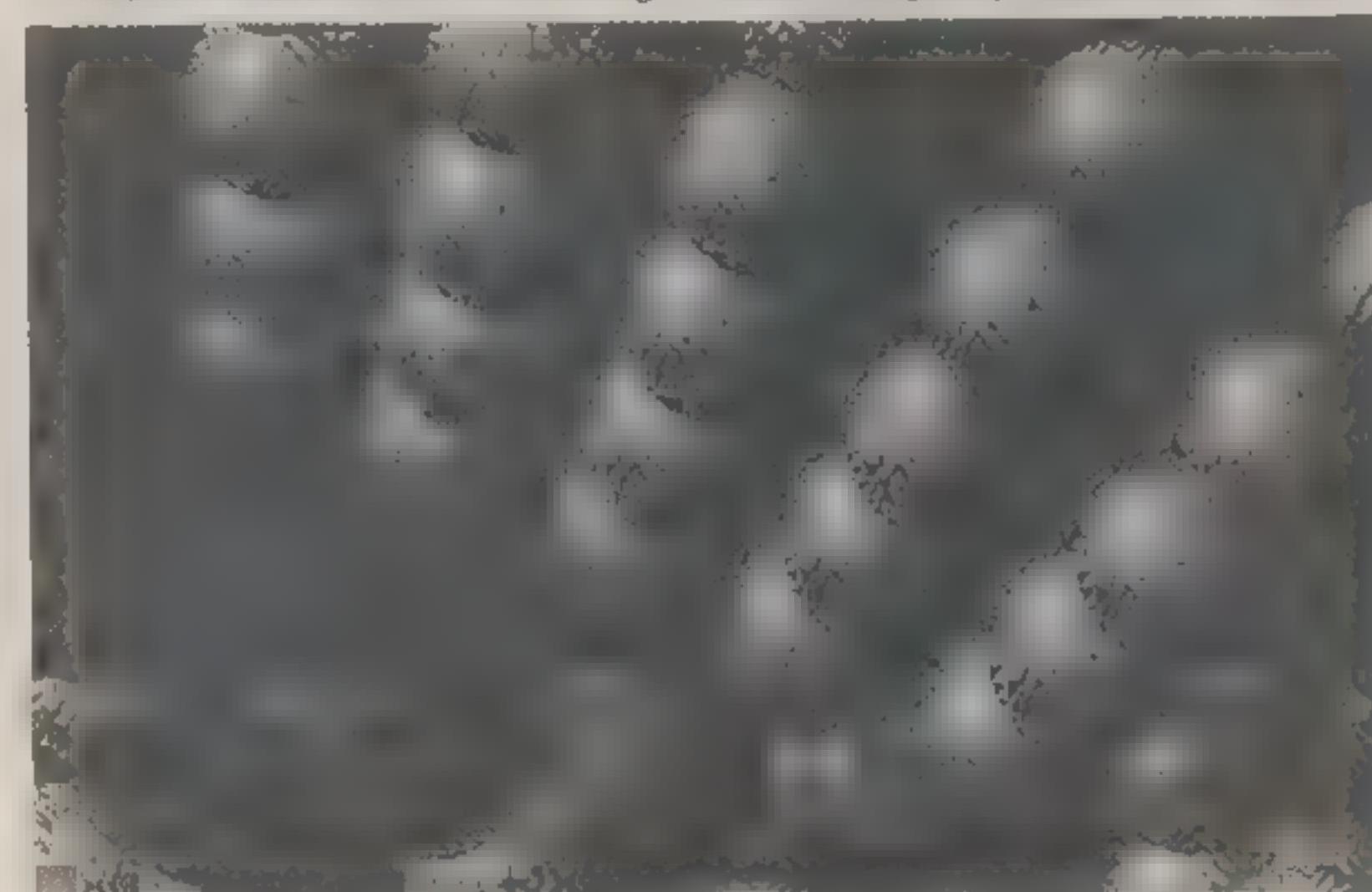
```
scanf("%d%d", &a, &b);
```

There are more functions in stdio.h for opening, reading, writing to and closing files. Other function libraries will be available with a good compiler. The math.h library will include functions such as the sqrt square root function used in the example code. ■

Followers of the PD scene will have noticed that among the wealth of software to crop up on their machines (especially ST and Amiga owners) ■ good percentage is impressive – if staid – scrollly demos.

A couple of really nice examples have turned up on the Amiga this week. The demos are a collection of short, colourful graphic routines, some of which are totally and utterly mindwarping. The graphic demos themselves, while hardly likely to change the world, are accompanied – like most demos of this type – by a funky soundtrack.

This brings up an interesting question. Is there a program available on the PD scene for either the ST or the Amiga



• The spinning balls demo might be a bit more impressive accompanied by your favourite track.

THE PD COLUMN

Frank O'Connor discovers some handy desktop utilities for the Amiga and a game that is not a load of Boulderdash in this weeks overview of the Public Domain.

which is able to synchronise some neat effects with a stereo system? A sound/light convertor shouldn't be all that difficult to build. We often see suitably impressive graphics accompanied by their own groovy score, but it would be

nice to listen to your favourite track, while your Amiga or ST jumped loops in sync with the music.

For example, bass notes could cause deep colour changes, trebles could influence shapes generated on screen, and *New Kids On The Block* could cause a total system failure. Seriously though, if anyone out there in PD land has a program capable of synchronising graphics with an remote sound source, drop a line to the PD column here at Express.

AMIGA GOODIES

A handy item for any Amiga owner to have on their desktop would be the latest utilities disk from Amiganuts United.

Not only does the disk have ■ nice, comprehensive range of utilities, but they are ■ very professionally presented, and easy to use. The options available on loading the disk are all selected with the mouse, making things as simple and

intuitive as possible. The people who program public domain utilities, are generally technically minded, writing programs for others of a similarly techie persuasion, so it's nice to see the occasional piece of serious – or at least useful – software designed with the novice in mind.

The programs on the disk are mostly disk utilities, but there are ■ couple of complete system checks, allowing you ■ make sure that the fundamental components of your Amiga are in good working order.

The first utility, *Boot Shop*, allows you ■ create and use special boots, and also offers some degree of virus protection. The second program, *Fast Disk*, ■ a speed loading program, a sort of disk-based turboload if you like. Next ■ a program called *Noisetracker* – a very comprehensive sound-handling utility, offering sample-manipulating facilities in a simple icon-driven environment.

MVL SOFTWARE

MAIL ORDER DIVISION OF ESTABLISHED RETAILER
0354 56433 24HR HOTLINE

UK VERSION

SEGA MASTER SYSTEM £74.99	SEGA 16 BIT INC GAME £184.99
SEGA MASTER SYSTEM + £94.99	GAMES FROM £29.99

ACCESSORIES FOR ALL MACHINES PHONE FOR DETAILS

★ MVL GAMES RENTAL CLUB ★
CALL FOR DETAILS

WE STOCK LARGE SELECTION OF SOFTWARE FOR ALL CONSOLES & COMPUTERS

SEGA 16 BIT INC GAME £169.99
TO TAKE JAP/ENGLISH/AMERICAN CART. MASSES OF SOFTWARE
PHONE FOR DETAILS

PC ENGINE HANDHELD P.O.A.
SUPER FAMICON P.O.A.
GAMEBOY INC GAME £69.99
AMSTRAD GX4000 + GAME £94.99
SELECTION OF SOFTWARE & ACCESSORIES FROM £5.99

"JUST A SELECTION OF WHAT'S AVAILABLE"
ALL ENQUIRIES WELCOME - "FRIENDLY FAST SERVICE GUARANTEED"
£1 P&P SOFTWARE, £5 P&P UK; "ACCESS & VISA"
OVERSEAS CUSTOMERS WELCOME.

CHEQUES & PO PAYABLE TO:

"MVL"

WHITEHART BUILDING, NENE PARADE, MARCH,
CAMBS PE15 8PH

CENTRAL SCOTLAND'S PREMIER PD LIBRARY

GAMES

- G025 Game Cheats and Tips
- G026 Adventure Cheats and Tips
- G039 Star Trek - The Next Generation*
- G040 Star Trek The Next Generation Trivia (2)
- G029 Games Pack ■
- G032 Return to Earth
- G035 Mayhem
- G036 O.C.P.D. Compilation
- G024 Property Market Game
- G001 Learn and Play (2)
- G021 P.D. Chess
- G007 Ten Game Compilation
- G042 Star Trek American (2)*
- G043 Stone Age
- G044 Snakepit
- G045 Dragons Cave*
- G041 Cluedo Compilation
- G012 Pseudo Cop
- G009 Tennis*
- G002 Treasure Trap
- G014 Boardgames

UTILITIES

- U039 Catalogue Workshop (2)
- U040 Scotia P.D. Compilation
- U050 Red Sector Demo Maker*
- U048 C-Light
- U060 Printer Driver Creator
- U074 Business Utilities
- U077 Pendle Mega Utilities
- U076 GrafX 1+2 (2)
- U078 Education Pack (5)
- U079 Midi Utilities

- U080 Video Title Maker
- U084 Cryptic Utilities
- U085 Pro-Tracker
- U086 Super Virus Killers
- U087 The Art of Virus Killing
- U088 Picture Converters

DEMOS AND MUSIC

- D061 Edd The Duck Mega Mix*
- D062 Evil Dead Demo*
- D063 James Bond Theme
- D064 Power Connection
- D066 Share and Enjoy Freestyle
- D067 Loadcrest Classics*
- D068 Elvira Activity Disk*
- D069 Monty Python Nudge Nudge* (2)
- S011 Aliens Slideshow (2)*
- M015 Blues Brothers (3)*
- D049 Amazing Tunes ■ (3)*
- D029 Budbrain 2*
- D050 Attic P.D. Compilation
- D027 Good Morning Vietnam
- D070 Tron Animation (2)*
- D071 Franklin The Fly
- M016 Aliens (2)*
- M014 Bagpipe Music

* = 1 Meg

We also stock the range of T-Bag and Fred Fish Disks and are official licenceware distributors
Prices

1-9.....	£1.50
10-19.....	£1.25
20+.....	£1.00

Inc. post and packaging

This is only a small selection of the hundreds of titles available from our constantly expanding library. Free disk catalogue sent with all orders. You can also call into our showroom and pick up your software. Payment by Access/Visa or make your cheques or P.O.'s payable to:

Office Choice
Suite 14, Avon House,
Town Centre, Cumbernauld, G67 1EJ
Tel 0236 737901



EXPRESS ON-LINE

Our comprehensive listings service this week featuring User Groups.

NEW ARRIVALS ON-LINE

AMIGA LOST GAMES CLUB - We are setting up a group to program Amiga games and send out demos to the different publishers so we need designers, coders, artists and musicians for the Amiga. Ring 0782 266964.

AMIDOS AMIGA PD SWAP CLUB - Send blank disk for details. No enlistment fee. Send SAE for prompt reply to 25 Salamanca Road, Cheltenham, Glos GL52 5LA.

AMIGANAUTS Disk Fanzine - Two disks, issue one out now. Only £2.50. Loads of PD demos, reviews etc. SAE for info or cheques/POs to N Gilling, 1 France Furlong, Great Linford, Milton Keynes, Bucks, MK14 5EM.

AMIGA SOFTWARE EXCHANGE SERVICE - small friendly swap service. Good selection. SAE for information to 13 Bourneville Lane, Birmingham B30 2JY. Free PD swaps. Telephone 021 4597576.

JOEL'S PD GAMES - for Amiga users. PD disks only 90p each. For a catalogue send an SAE to Joel's PD Games, 389 Scalby Road, Newby, Scarborough, North Yorkshire, YO12 6TG. Please add a blank disk.

THE DISK issue two for Amiga users. Packed with PD including Power packer, Superecho, Game, Textra, Polpot, Demo, Iconmaker and loads more. Send £1 to S Lord, 6 Stubbing Brink, Hebden Bridge, West Yorkshire, HX7 6LR.

ABC AMIGA BEGINNERS' CLUB - PD library review. More info in beginners' pack. Send £1.50 to Ian, 110 Whitehill Park, Limavady, Co Londonderry, N.Ireland, BT49 0QG. Tel: 0504 765174

ACORN 8-BIT PD SOFTWARE - Write to Alan Blundell, BBC PD, 18 Carlton Close, Blackrod, Bolton, BL6 5DL. Send SAE for £1.50 for sampler disk

ACORN ARCHIMEDES RISC USER

117 Hatfield Road, St Albans, Herts.

ACORN ARCHIMEDES Archive, 18 Mile End Road, Norwich NR4 7Q

AMATEUR RADIO (CBM) - Simon Lewis GM4PLM Commodore Radio Users Group, 69 Irvine Drive, North Clippens, Linwood, Paisley

AMIDOS AMIGA PD SWAP CLUB - send blank disk with an SAE or £1 for a starter catalogue and details on how to join. A prompt reply given to all members and new applicants.

AMIGA AND PC PD CLUB - Contact Prestel MBX 011115474 or send stamp to 48 King William Drive, Cheltenham, Glos, GL53 7RP

AMIGA CHEAT DISK FANZINE - JS Smith, 45 Maplecroft Crescent, Sheffield S9 1DN.

PC INDEPENDENT USER CLUB - Helpline service, bi-monthly journal, shareware/PD, local meetings, bulletin board, £29-£50 pa (£36 businesses, £19 students). Free 30 day trial 0732 771512.

AMIGA OWNERS - PD software to swap and sell. New library for Irish Amiga owners. Phone John at Limerick (061) 312257 or write to 21 Lower Careys Road, Limerick, Ireland.

ATARI ST demos/PD wanted. If you can write demos or want exclusive titles. Write to ST Demos, 8 Bertie's Road, Beaconsfield, Stafford, ST16.

3JJ.BBC-B PD - From just 14p per disk. Send SAE to BBC-B PD, 21 Whitehorse Street, Hereford, HR4 0EP. Send 50p plus disk for sample and catalogue. Send 20p for three page catalogue.

CLUB AMIGA answers your questions on software and hardware on its 24 hour helpline. Join now. Send £5 to Club Amiga, 5 Bowes Lea, Shirey Row, Tyne and Wear DH4 4PP.

INERTIA ADVENTURES - A ray of light in the dark cavern of the text adventure. Do you dare to enter this saga? Proceed by phoning 0265 51851 for details.

MG SOFTWARE - Atari ST Public Domain, only 65p and £1. Send SAE for catalogue to MG Software, Cornerways, Beckingham Street, Tolleshun Major, Essex M9 8LL.

AMIGA DISK MAG - with a new style with over 100 pages of news, reviews, art, music, and PD on two disks. Send £3 to Paul Harthen, 43 Boyds Walk, Dukinfield, Cheshire, SK16 4AX

AMIGA HELP CENTRE - A group to help novices. For CLI help disk and registration send £10 to Simdev, 29 Avon Square, Hemel Hempstead, Herts.

AMIGA HELPLINE SERVICES - Free club for young and old. Send SAE to G Keenan, 21 Skirsa Place, Glasgow, G23 3EE.

AMIGA LA FANZINE - Only £2 including membership. L Stacey, 3 Norfolk Close, Bewbush, Crawley, West Sussex, RH11 8GJ

AMIGA PD - over 600 disks. Only 75p each. For catalogue send SAE and 50p to Mark Knight, 20 Mayfield Crescent, Patcham, Brighton, Sussex, BN1 8HQ or tel 0273 557113. Special bulk prices on orders over 50 disks

AMIGA PD - Software for sale. If you live in South Wales then look no further. Disks only £1.50 inc P&P. Write now to SWAPD, 38 Syon Park Close, St Mellons, Cardiff. All the latest in demo, music, utilis etc

AMIGA PUBLIC DOMAIN - only 85p per disk. Send SAE for details to Paul Brown, 14 Elmfield Road, Rossington, Doncaster, DN11 0BP or call 0302 865148 after 7pm.

AMIGA PUBLIC DOMAIN - JI Meachen, 59 Lee Road, Harwich, Essex, CO12 3SB.

AMIGA PUBLIC DOMAIN USER GROUP - Ashley Tarver, 5 Saunders House, Binswood Avenue, Lemmington Spa, Works, CV32 5RZ

AMIGA SHAREWARE - Send SAE for lists to 4 Sedgewick Close, Atherton, M29 9EF

THE AMIGA TEAM - A group to help novices. Help given in programming - Assembly, BASIC, C, Logo, Pascal and C++ For registration and introduction pack send £10 to 11 Beech Grove, Northallerton, North Yorks, DL6 1JY

AMOS/STOS PD LIBRARY - send SAE for a catalogue to 25 Park Road, Wigan, WN6 7AA. Telephone 0942 495261 before 6pm.

AMSTRAD BUSINESS USERS - Amstrad Professional User Club, Enterprise House PO BOX 10, Roper St, Pallion Ind Estate, Sunderland SR4 6SN. Tel 091-510 8787

AMSTRAD CPC USERS - Tony Baker, United Amstrad User Grp, 26 Uplands Crescent, Fareham, Hants PO16 7JY. Tel 0329 234 291

AMSTRAD CPC HOME USERS - Steve Williams, WACCI, 9 South Close, Twickenham TW2 5JE. Tel 081-898 1090

AMSTRAD LOCAL GROUPS - Amstrad Groups Federation, 4 Sutton Road, Gorton, Manchester

AMSTRAD PC SOFTWARE - Colin Smith, Colbar, 10 Penwood Cl, Westbury, Wilts BA13

AMSTRAD PCW - PD software: Bob Ellis Tel 0432 761860 Queries: David Axford Tel 0428 56438

AMSTRAD PCW - Bob Ellis 'Rowan' 100 St Peters Close, Moreton-on-Lugg, Hereford HR4 8DW. 0432 761 860

AMSTRAD 1512/1640/PPC - PC Independent User Group, The Computer Advice Centre, High Street, Tonbridge, Kent. Phone 0732 771 512

AMSTRAD BUSINESS USERS - Amstrad Professional User Club, Enterprise House PO BOX 10, Roper Street, Pallion Industrial Estate, Sunderland SR4 6SN. Telephone 091-510 8787

APPLE II USERS - tel 051 9284142.

APPLE MACINTOSH - John Lewis, Macintosh user group, Macintosh House, 11 South Parade, Summertown, Oxford OX2 7JL

APPLE SYSTEMS - Irene Flaxman, Apple 2000, PO Box 3, Liverpool L21 8PY.

ARABIC COMPUTING - Rich Lackey, Arabs, 9 Bellview road, Worthing, West Sussex BN13 1EY

ARCHIE PD - for 2.4Mb sampler pack send three £ Format disks, SAE and £1 to Archie PD, Dept NCE, Highover, Udimore, Nr Rye, East Sussex

ASHTON TATE SOFTWARE - Silvia Robinson, Baseline, Ashton-Tate, 1 Bath Road, Maidenhead, Berks, RG28 33123. Prestel page 43221

ASTAC - a new Atari ST and console mag. For details send an SAE to Astac, 383A Drayton High Road, Helleston, Norwich, Norfolk, NR6 5BG.

ASTMATIC AARDVARK PD FACTORY - the best for PC, ST and Amiga. Send £1 for a demo disk to Highover, Udimore, Nr Rye, East Sussex, TN3 6BG.

ATARI ALL MACHINES - Colin Hunt, BaPAUG, Wimborne Road, Oakdale, Dorset BH15 3EF

ATARI AND ST PC EMULATOR SUPPORT CLUB - SAE to 153 Parrock Street, Gravesend, Kent, DA12 1ER

ATARI CONNECTION PD - High quality disks only. Only 99p per disk. Wide selection - utilis, demos, games etc. For disk catalogue send disk to ACPDL, 72 Lancelot Avenue, Strood, Kent

ATARI PORTFOLIO - D Gipin, Atari Portfolio User Group, 84 Cambridge Avenue, Gidea Park, Romford RM2 6QU. 0708 730764

ATARI ST DIY HDISK BUILDERS CLUB - information on how to build from scratch an HDisk system for your ST. Help given on what you'll need and how to connect it all up. Call 0495 272092

ATARI ST OWNERS - public domain from £1.50 per disk. Write to 22 Merryfields Avenue, Hockley, Essex, SS5 5AL

ATARI ST SOFTWARE - write to 16/32 PD library 35 Northcote Road, Strood, Kent ME2 2DH

ATARI ST - Paul Glover, The ST Club, 9 Sutton Place, 49 Stoney Street, Nottingham NG1 1LX. 0602 410241

ATARI ST/STE HELPLINE - We can scan, digitalise and provide loads of clip art, SAE to Nist 53, Lenaghan Park, Belfast, BT2 4JB

ATARI ST USERS - ELECTRON. 2 disks plus 40 page mag. Reviews, articles, games, advice, electronics, software library (PD 50p each) and Chess. £3.50 inc membership (refundable). Andrew Betts, The Mount, Wood Lane, Gallowtree Common, Reading, Berks, RG4 9BG

ATARI ST USERS ASSOCIATION - provides support for all Atari ST/E users. Help and advice given. Quarterly club magazine and disk. Also exclusive PD library for members. For further information write to ASTUA, 18 Poplar Close, Biggleswade, Beds, SG18 0EW

BBC MICRO - BEEBUG, 117 Hatfield Road, St Albans, Herts AL1 4JS. 0727 40303

BASIC PROGRAMMERS' GUIDE - for all BASIC programmers. Phone Andy on 081-648 4326

BATPIG - Turbo Pascal user group also open to other PC Pascal programmers. Costs £10 per year. Write to 12 Clegg Avenue, Cleveleys, Blackpool, FY3 9BJ. Send an SAE for sample.

BURMAN'S PD - Amiga PD for 40p. For a catalogue on disk, a few demos and a game send a stamp and disk to Burman's PD, 41 Pinner Park Gardens, Harrow, Middlesex, HA2 6LQ

BYTER PD - For list and latest titles of Atari ST and Amiga PD write to Byter PD, PO Box 182, London, SE6 1BZ

C64 PD CLUB - 1 Masaba, 84 Garroyle Rd, Liverpool L15 3JH

C64 PUBLIC DOMAIN - Phoenix, 64 Plumberow, Basildon, Essex

C LANGUAGE - Bi-monthly newsletter, C source library and BBS. £14pa. Contact Francis Glassborow, 64 Southfield Road, Oxford, OX4 1PA.

C USERS GROUP - Francis Glassborow, 64 Southfield Road, Oxford OX4 1PA. For everyone interested in the C and C++ programming languages. Publishes a bi-monthly newsletter.

CAMBRIDGE Z88 - Roy Woodward, Z88 Owners' Club, 68 Wellington St, Long Eaton, Nottingham

CD ROM - UK CD-ROM User Group, High Wings, Salem, Trefbrys, Abertawe 0792 844 370

CHESTER 16-BIT USERS CLUB - Amiga, ST, PC, Arc at Radley Common community centre, off Poplars Avenue, Orford, Warrington, Cheshire. £1 admission.

CHESS COMPUTER PROGRAMMERS and interested players send an SAE to Steve Roe, 25 Nene Walk, Worksop, Notts or ring BBS 0909 479080

CHOICE - on-line help. Tel 0308 23224

CHERESHIRE NIMBUS USER GROUP - Geoff Nelder, Queens Park High School, Handbridge, Chester

CHURCH ADMINISTRATION - Rev Stoker Wilson, Church Computer User Group, St John's Vicarage, Greenside, Ryton, Tyne & Wear NE40 4AA. 091-413 8281

CID (Computers and Integration for the Disabled) is a registered charity. Write to Gordon, Chelsea Road, Inverurie, Aberdeenshire, AB9 9QZ or tel 0467 24202

CLERGY/MEDICAL EDUCATION - Mr T Jones, FREE-ED Shareware/PD ■ Stoke road, Taunton, Somerset TA1 3EL Tel 0823 321 481

CLUB AMIGA - Discounts, 24 hour help line. For more info send an SAE to Club Amiga, 5 Bowes Lea, Shirey Row, Tyne and Wear, DH4 4PP

CMS PD LIBRARY - Sam Coupé PD software for only £1.50 a disk. Send an SAE and a blank disk (or 70p) for a disk catalogue to CMS PDL, Dept NCE, 70 Donald Drive, Chadwell Heath, Romford, Essex RM6 5DU.

COBOL LANGUAGE - Allen Reavie 22 Mourneview St, Portadown, Northern Ireland. BT62 3AW

COLECO ADAM - Keith Mamer, UKAS 33 Homer Road, Croydon CR0 7SB

COMMODORE ALL MICROS - Jack Cohen, ICPUG, PO Box 1309, London, N3 2LT. Tel 081-346 0050 after 6pm

COMMODORE 64 CLUB has been on the go for the last five months and new members are welcome. For more details send an SAE to The C64 Club, 20 Finlow Place, Dundee, Scotland

COMMODORE AMIGA - UK Amiga Users Group. Contact 144 Charles Street, Leicester LE2 0OD. Telephone 0533 510066 voice: 0533 517615

COMMUNITY COMPUTING - Community Computing Network 2nd Floor, 35 Pink Lane, Newcastle, NE1 5DW. Tel 091-261 0317

COMPUCORP - Compucorp University users group c/o Compucorp, Cunningham House, Westfield Lane, Kenton, Middx

COMPUNET - write to Independent Compunet Club, 148 Furzehill road, Boreham Wood Herts. WD6 2DX

COMPUTER LYNX - Amiga disk magazine. Only £1.50 plus 50p p&p. Huge range of PD from £1 per disk. Write to 187 Perrysfield Road, Cheshunt, Herts, EN8 OTL.

CONFERENCE - Compulink, suite 2, The Sanctuary, 23 Oakhill Grove, Surbiton, Surrey KT6 6DU. Voice 081-390 84

FRACTALS/CHAOS THEORY - Andy Lunness, 69 Bronte Avenue, Bury, Lancs BL9 9RN. Telephone 061-764 6469

GARFIELD'S PD - Amiga PD software to swap or for sale. Send 99p for disk catalogue to 40 Penrhos Cres Rumney, Cardiff, South Wales

GENEALOGISTS - Computer Group, Society of Genealogists, 14 Charterhouse Buildings, London EC1M 7BA. Tel 071-251 8799

GENERAL AMIGA - disk based magazine for the Amiga. Only £1.50 per issue. Send order to 19 Earn Court, Alton, Clacks, FK10 1PT

GENERAL HOME MICROS - Steve Winter, Chic Computer Club, PO BOX 121, Gerrards Cross, Bucks SL9 9JP. Tel 0753 884473

GEOS USER GROUP - for C64 and 128 owners. Disk based magazine. Send blank disk to GUG (UK) 110 Deansway, Woodloes Park, Warwick CV34 5DQ

GUG (UK) - GEOS User Group for C64/128. Also non-GEOS PD library. Send disk and return postage for GEOS. SAE for non-GEOS to GUG (UK), 110 Deansway, Woodloes Park, Warwick CV34 5DQ

GUNNING PD PD - Atan ST PD library. Disks only £1 each and supplied on branded disks. Send three first class stamps to 47 Auchincarron, The Tryst, Edinburgh, EH10 7HX for disk catalogue. Wow!

GROUND FLOOR USER GROUP - support for all serious users of PC, ST, Amiga and PCW. Meets monthly at Calderdale, West Yorkshire. Further information from Jac on 0422 844991 days or 0422 845789 eves.

GUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX. Telephone 021-722 3168

HOUSING ASSOCIATIONS - Caroline Maries, Micro Users Ltd, Beaver Housing society, 23 Lewisham High Street, London SE13. Tel 081-318 1126

HEALTH WORKERS - Sue McKendrick, Healthlink, 164 Windsor Rd, Ashton-in-Makerfield, Wigan WN4 9ES. Voice: 0942 712 385

IBM PC USER GROUP - PO BOX 360 Harrow HA1 4LQ. 081-863 1191 BBS 081-863 6646

JOMAC USER GROUP - Spectrum and Amiga tips and pokes sent every month. Write with SAE to Jomac's, Filey Grove, Rhodes Street, Hull.

JUPITER ACE - John Charter, Jupiter Ace Forth User Group, 17 Spring Wood Close, Dunston, Chesterfield S41 8BS. Tel 0246 237555

LOCAL AUTHORITIES - Local Authority Micro User Group, John New, Borough Engineer's Dept, Municipal Offices, North Quay, Weymouth, Dorset DT4 8TA. Tel 0305 785101 ext 272

LOTUS PRODUCTS - Lotus User Group, 79-80 Peascod St, Windsor, Berks SL4 1DH. Telephone 0753 841686

LYNX - R B Jones, Lynx User Group, 39 Ashton Close, Needingworth, St Ives, Cambs

YNX DISK USER GROUP - Joushappas, 172 Pasteur Gdns, London N18. Tel: 081 807 3859

MAC SOFT - six games for the Amstrad CPC6128. Send SAE, blank disk and 50p copy charge to Macsoft, 2 South Weade, Maghull, Liverpool, L31 8EF.

MACH MAC PD - The best there is. Explosively good public domain for the Macintosh. £1 for demo disk and catalogue of over 900 disks. Write to MAMPD, Highover, Udimore, Nr Rye, East Sussex.

MAGNETIC MEDIA HANDLE WITH CARE - Amiga disk fanzine with news, reviews, music, games, utilities, userhelp. At least two disks per month. Each issue £2.80. Write to Magnetic Media HWC, 25 Rigbourne Hill, Beccles, Suffolk NR34 9JC.

MEGADRIVE CONSOLE CLUB - Used and new games sold, also exchange system and games brought from £6-£22. Write to Andrew Stanford, MCC, 15 Telford Park Drive, Alcester, Warwickshire, B49 6QR or Tel: 0789 764039 after 1pm

MEMOTECH FILE - 93b St Johns Road, Illdulph, Staffs ST8 6LL

MEMOTECH - Phil Eyres - Memotech Owners Club, 23 Denmead Road, Fareham, Southampton SO2 5GS. Tel 0703 585106

MICROSOFT WORD - Lesley Port, Folly House, Madeira Walk, Bachelors Acre, Windsor, Berks. Tel 0753 831001

MICRO-DESIGN USER GROUP - a new group for those PCW owners requiring assistance and advice with this DTP package. Large clip art library available. Phone Phil on 0709 543390

MID CORNWALL COMPUTER CO-OP - Atan ST, 8 Victoria road, Roche, St Austell, Cornwall PL 26 8JF. Telephone 0726 890473

MIDI/MUSIC - Spectrum music machine/MIDI user group. Magazine on tape, plus programs and lots more. For more details contact Sean Sanderson on 05242 62258

MOTOROLA 68xxx MICROS - write to Rick Applegate, 68 Microgroup, 8 Great Cob, Springfield, Chelmsford, Essex. BBS tel 081-316 7402

MSX SYSTEMS - write to Keith Neal, MSX Link, Austerby House, 80 Austerby, Bourne, Lincolnshire PE10 9JL

NASCOM/80-BUS/CPM - Scorpio Systems, PO Box 286, Aylesbury, Bucks HP22 6PU. Tel 0296 624868

NEW BUG COMPUTER CLUB - Support for all machines. Meets weekly at Oxclose Multi-Purpose Centre in Washington each Tuesday at 7pm. All welcome, visitors 50p

NEUBRAIN - Ron Bury, NewBrain Support Grp, 70 Cranberry Lane, Darwen, Lancs BB3 2HU. Tel 0254 771891

NIMBUG - write to 13 Belle Vue Ave, Gosforth, Newcastle-upon-Tyne NE3 1AH. Tel 091-285 7806

NINTENDO GAMEBOY - I would like to start a user group for the Game Boy. Write to Justin Spencer, 2 Rose Villas, Thurnholme Farm, Duxton Ferry, Near Doncaster DN9 1BE or Tel 0427 72588

NW ARCHIMEDES USER GROUP - Meets every Friday at Citizens Advice Bureau, next to Spectrum arena in Birchwood, Warrington. Ring Paul on 051-426 3915 after 6pm

OLIVETTI PC1/PCS USER GROUP - Help with all aspects of these machines. Tel 0924 892106 or write to 68 Queen Elizabeth Drive, Normanton, W Yorks

OS/2 - Karen Burns, OS/2 User Group, Cecily Hill Castle, Cirencester, Glos GL7 2EF. Tel 0285 655888

OSBORNE/CPM/MSDOS - write to Jeremy Browne 800G, 102a Aldershot Road, Fleet, Hants GU1 3 NY. Tel 0252 621745 voice or 626233 BB

PAGESTREAM USERS GROUP - all Atari/Amiga owners of Pagestream send large SAE to PUG, 70 Offerton Lane, Stockport, SK2 5BS. Include all your tips please.

PAS PD - for the ST. Send 75p for the latest details and disk catalogue (refundable). Write to PAS, 97 Holland Street, Ebbw Vale, Gwent NP3 6HY.

PC SOFTWARE - PC Serve, 1147 Greenford Rd, Greenford, Middx UB6 0DP. Tel 081-864 2611, BBS 081-864 2633

PCW PD CLUB - It's new, it's fresh. Swap PD for PD, up to three disks at a time. Bi-monthly newsletter soon. All PCW owners welcome. Write to 3 Moorend Ave, Chorley Wood, Birmingham, B37 5SD.

PD-X AMIGA PD - FROM 50p. Are you tired of over priced PD? Send an SAE to PD-X, 48 Seagrove Grove, Hull, HU7 5EB and we will send you a catalogue. Send SAE and a disk for a free demo.

PERFORMANCE PD - PD for the ST. 30 Prospect Road, Dutton Broad, Lowestoft, Suffolk, NR32 3PT. Tel: 0502 513923. Disk list £1. Cheques/PDS payable to Performance PD.

PHILOSOPHY APPLE - G Haines, Chinese Room Club, 43 Cornwallis Gdns, Hastings, East Sussex TN34 1LX. Tel 0424 714 102

PICK OPERATING SYSTEM - Hugh Kelt, UK Pick Users Assocn, PO Box 907, London N10 2SB. 081-462 4666

POWER PD - 90p per disk. Wide range. Send 90p for current Amiga catalogue on 3.5 inch disk to Chris Jackman, 3 Albion Terrace, Lexham Road, Litcham, Kings Lynn, Norfolk, PE32 2QQ.

POTENTIAL PD - for the Atan ST. Public domain to sell and swap. SAE to Helenville, School Road, Coldingham, Berwickshire TD14 5NS.

PRESTEL - Andy Leeder, ClubSpot 810, Church Farm, Stratton St Michael, Norwich, Norfolk, NR9 2QB

PSION ORGANISER - Mike O'Regan, IPSO, 130 Stapleford Ln, Beeston, Nottingham NG9 6GB. Tel 0602 735482

QUANTA, QL AND THOR USER GROUP - The Corner House, Loxley, Warwick, CV35 9JT. Tel: 0789 842543

R&G PD - For cheap Amiga PD send SAE for list to R&G PD, 23 Melmount Gardens, Strabane, County Tyrone, Northern Ireland or send a disk for list and game. Also willing to swap.

RESEARCH MACHINES - Steve Rochford RM National User Group, George Stephenson High School, Southgate, Killingworth, Newcastle NE12 0SA. Tel 091-268 2002

REVELATION (PICK) - write to Malcolm Frame, UK Revelation User Group, 136 Saint Albans Road, Watford WD2 4AE or Telephone 0923 35515

R:BASE - write to Mrs Tansy Beat, R:Base User Group c/o Room A2044 BBC Woodlands, 80 Woods Lane, London W12 OTT. Telephone 081-576 7187

RICHARDS PD LIBRARY - Support for Amiga PD. A massive range of demos, utilities, music, AMOS, Slideshows etc. Most disks £1.50. Some £2.50. All disks dispatched as soon as we receive the order. 74 Cross Deep, Twickenham, Middx, TW1 4RB.

S&T PD - for the ST. Large selection of PD from £1. Send £1 or a disk and 50p for a list. All prices include postage and packaging. Send cheque or PO to Simon Eve, S&T PD, 6 Crediton Road, London, NW10 3DU

SA40 - User group - write to Roy Williams, 17 Grove Road, Acton, London W5 5AW.

SAINT JOHN'S SCHOOL LIBRARY - PDL - Atari/ST PD software for sale or swap. Write to St John's School Library PDL c/o Mark Ash, 54 Beaconsfield Road, Sittingbourne, Kent ME10 3BB or telephone 0795 425653 after 4pm

SANYO MBC-550 - M H Syed, Wistaria, 53 Acacia Grove, New Malden, Surrey KT3 3BP. Tel 081-942 9009

SCHNEIDER EURO PC - Alex Kefford, SEPUG, 11 Crabtree Road, Three Bridges, Crawley, West Sussex RH10 1NF

SCIENTIFIC PC USERS - write to Tim Bunning, SPCUG, PO Box 17, Retford, Notts DN22 6BQ. Tel 0777 209009

SEGA SWAP CLUB - Exchange your old megadrive games with other members. For details send SAE to SSC, 10 Sandwith Road, Todmorden, S31 0JP

SERIOUS GAMER - Flat C, 43 Colvestone Crescent, London E8 2LG. Telephone 071-241 5446

SERVICES USERS - write to Squadron Leader G Howson, Services Personal Computer Association, Silk Eng 15a HQSTC RAF High Wycombe, Buckinghamshire

SHAREWARE SWAPSHOP - 400 plus PC shareware disks available free. Send blank disk (3.5 or 5.25) and return postage for a copy of our catalogue to The SSS, 69 Tillingbourne Green, St Mary Cray, Orpington, Kent, BR5 2EX

SHARP USERS CLUB - contact Andrew Ferguson, 11 Harcourt Close, Henley-on-Thames, Oxon RG9 1UZ. Tel 0491 574850 evenings only

SHREWSBURY AMIGA USER GROUP - 1 Haughton Court, Featherbed Lane, Harlescott, Shrewsbury, SY1 4NJ. Please enclose an SAE

SIRIUS - Simon Sheppard, ISSUE PO Box 222, Brighton BN1 3BR

SHAREWARE KING - quality PC shareware. Over 3000 disks. Send SAE plus disks for catalogue to C Smith, 10 Penwood Close, Westbury, Wilts, BA13 3LW. Tel 0703 865263

SHREWSBURY AMIGA USER GROUP - informal meetings and lots more planned. Write with SAE to A Predee, 1 Haughton Court, Featherbed Lane, Harlescott, Shrewsbury, SY1 4NJ.

SOFTWARE EXCHANGE - send an SAE for info to 13 Bourneville Lane, Birmingham, B30 2JY or phone 0860 444694 from 1pm to 10pm

SOFTWARE EXCHANGE SERVICE - buy/sell/swap Amiga, ST and PC. SAE for info to 13 Bourneville Lane, Birmingham B30 2JY or call 0860 444594.

SOLITUDE MOUNTAIN - friendly new Amiga user group. Send blank disk or 50p to 565 Heathway, Dagenham, Essex

SORD M-23 - Nicholson, Schlumberger Norge A/S, Bjergstadelven, 4007 Stavanger, Norway. 474 657002

SMART SYSTEMS USERS - write to Francis Barton, Basement Holy Rosary church, Louis Street, Chapeltown, Leeds LS7 4BP. Tel 01532 629202

SOFTWARE EXCHANGE SERVICE - for info send SAE to 13 Bourneville Lane, Birmingham, B30 2JY. New telephone number: 021 459 7576. Buy/swap/sell.

SOUTH 16 AMIGA USER GROUP - the UK's number one Amiga user group. For more information send SAE to South 16, PO box 16, Southampton, SO9 7AU. Now!

SOUTHERN AND DISTRICT PC and ST user group - Tony Lowes 61A Broadway West, Leigh on Sea, Essex SS9 2BX

SPANDEFANG SOFTWARE - 68000 AC Coders magazine. Send £2 for sample to 4 Cambridge Terrace, Harrogate, North Yorkshire, HG1 1PN.

SCIENTIFIC PC USERS - write to Tim Bunning, SPCUG, PO Box 17, Retford, Notts DN22 6BQ. Tel 0777 209009

SPECTRUM PLUS 3 USER GROUP - monthly magazine. 57 Lovers Walk, Dunsdale, Bedfordshire, LU5 4BG

SPECTRUM DISCOVERY CLUB - magazine on disk for the Opus Discovery Disk Drive and the Sam Coupé. BD Mumford, 57 St Saviours Road, West Croydon, Surrey CR0 2XE

STEN - the ST enthusiasts newsletter issue three now ready. Send a disk and SAE for your copy now. Postal Trivia League starting. Interested? Write to 14 School Road, Morningside, Newmans.

STOS - magazine, out every month. Send an SAE for full details to 11 Shore Crescent, Bishops, Waltham, Hants SO3 1DZ

STOURBRIDGE ATARI USERS' GROUP - for 8-bit Atari computers. Send SAE to LK Taylor, 99 Breton Road, Stourbridge, West Midlands, DY8 4LA. Telephone 0384 379575

STUPID FLOWER PD - new library for ST users. Send an SAE for a free catalogue to SFPD, 3 Read Mead, Glastonbury, Somerset BA6 8ON or call 0458 35027 and ask for Matt.

SUPERPROJECT - Geoff Groom

3.5"



**'OUR DISKS ARE
A SNAP AT
THESE PRICES'**

	3.5" DS/DD	3.5" SONY	3.5" DS/HD	5.25" DS/DD	5.25" DS/HD
25	9.99	12.99	22.99	7.99	13.99
50	18.99	23.99	43.99	13.99	24.99
100	32.99	41.99	64.99	22.99	47.99
250	76.99	109.99	156.99	55.99	113.99
500	148.99	191.99	303.99	109.99	213.99
1000	284.99	357.99	599.99	214.99	399.99



**SNAP
COMPUTER
SUPPLIES LTD**

LOCKABLE DISC BOXES

40/50 x 3.5 - £3.49
50 x 5.25 - £3.49
80/100 x 3.5 - £3.99
100 x 5.25 - £3.99

THESE PRICES ONLY IF
PURCHASED WITH DISKS

"Our disks are fully guaranteed and come complete
with labels or envelopes, labels and tabs."

AMIGA 3.5
EXTERNAL
DISK DRIVE
AMIGA
512K RAM
EXPANSION
WITH CLOCK

£59.99

£34.99

SPECIAL
OFFER
BUY BOTH FOR
£93.99



ALL PRODUCTS SUBJECT TO AVAILABILITY.
ALL PRICES INCLUDE VAT PLEASE ADD
£2.99 POSTAGE AND PACKING E.O.E.

Hotline Number 0345 045455

1st Floor, I-Mex Business Park, 42 Flaxley Road, Stechford, Birmingham B33 9HL

AMIGA REPAIRS JUST £44.95 inc.



- ★ Commodore authorised and registered repair centre
- ★ Over 10 years experience with Commodore computers
- ★ 20 qualified technician engineers at your disposal
- ★ We will undertake to repair your Amiga 500 computer for just £44.95 including parts, labour, VAT and post & packing
- ★ Most computers will be turned around in just 24 hours!
- ★ Prices include full service check, overhaul, soak-test and replacement of power supply unit if necessary
- ★ Repairs to keyboard and disk drive also included (£25 extra if these units are unrepairable and require complete replacements)
- ★ All repairs covered by a 90 day warranty



Upgrade your Amiga from 512K to 1Mb of memory for just £25.00

SPECIAL EXCLUSIVE OFFER:

If you submit your computer to ourselves for repair, enclosing this advert along with just an additional £25, we will supply and fit a 512K memory expansion at no extra cost.

How to take advantage of this exceptional offer: simply send or hand deliver your machine to the workshop address detailed right, enclosing payment and this advert and we will do the rest. (If possible please include a daytime telephone number and fault description).

* If you require 24 hour courier to your door, please add £5 else your computer will be sent back by contract parcel post.

WTS ELECTRONICS LTD
STUDIO MASTER HOUSE
CHAUL END LANE
LUTON, BEDS, LU4 8EZ
Telephone (0582) 491949 - (4 lines)

WTS reserve the right to refuse machines that in our opinion are tampered with, to an extent beyond reasonable repair

THE £500 HARD DRIVE LAPTOP

A year ago the thought of any true laptop costing under £500 was enough to raise an eyebrow. In the last 12 months, new models have arrived and prices have dropped. First to break the £500 barrier was the Bondwell B200. A reasonably specified machine, it was still without a hard drive.

The Epson Equity has been around for some time and falls into the category of 'heavy lap top'. This means that it has a battery pack and can work away from the mains, but weighs in at over 10 pounds. The original Equity had 2,720K and 3.5-inch drives, but in this version, one has been replaced by a 20Mb hard disk. Distributor for the hard drive Equity ■ UK Home Computers and boss Ron Gladwin said: "We're offering what people want ... a hard drive laptop. But our price is one that they can afford."

If the sub £500 laptop was an unheard of make from the Far East it would be enough to make us look twice, but to be a product from a quality manufacturer like Epson makes it worthy of immediate note.

VALUE

For your £499 (plus VAT) you get the Equity LT lap top computer configured with a 3.5-inch floppy disk and a 3.5-inch 20Mb hard drive. The machine has 640K of memory and a supertwist LCD display. The LT is a true portable with an AC power pack that can power the machine from a mains socket and charge the on-board battery. There is a socket to allow the connection of a colour CGA monitor. An expansion socket has room for a single 8-bit half card and Epson produces an optional modem card to fit it. A second slot is used by the controller for the hard disk.

It is possible to add an external 5.25-inch drive and the floppy disk controller can handle two floppies of either size. The hard disk controller card is generic to the internal drive.

INTERFACES

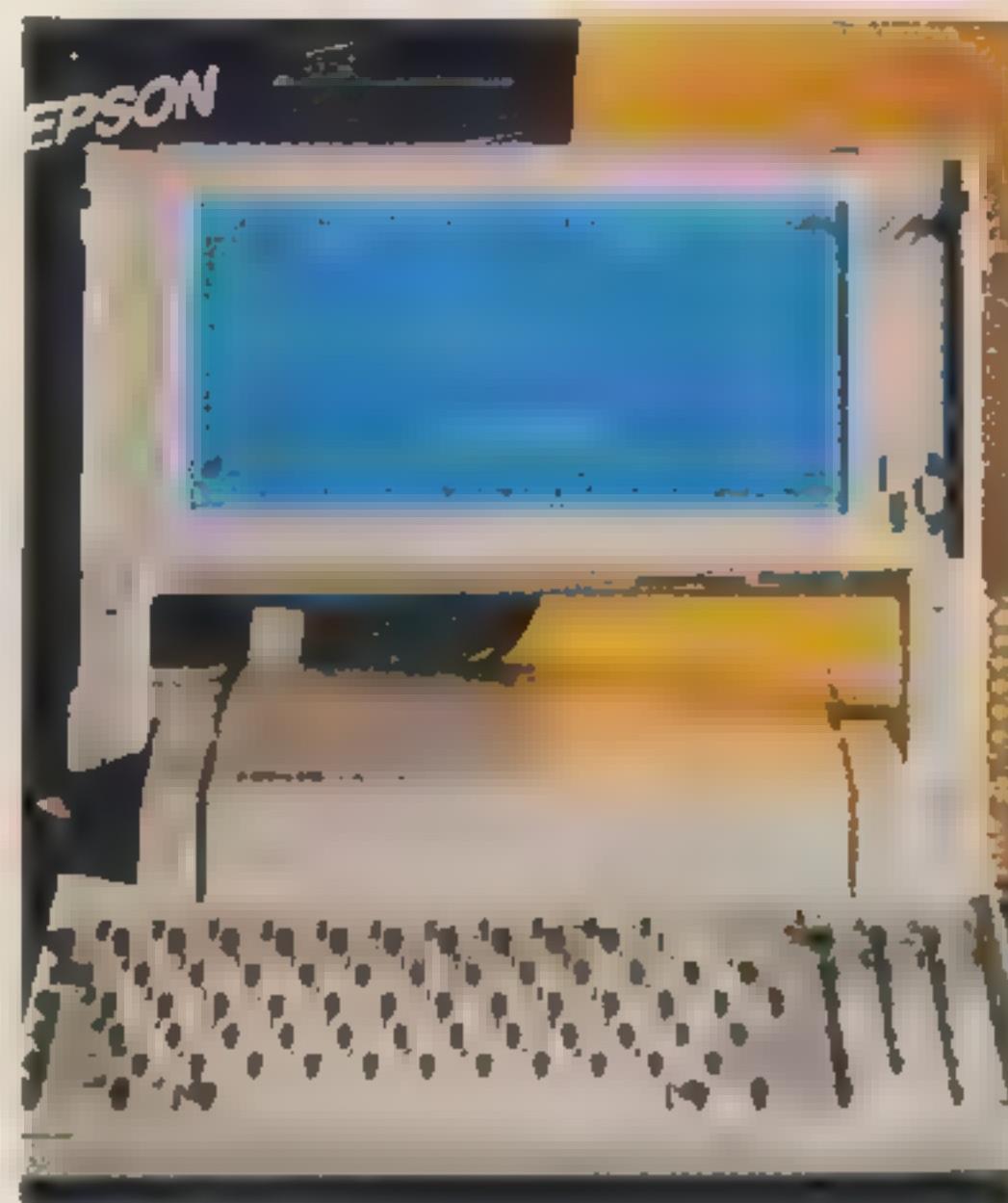
Printers are reached by a standard 8 bit parallel port conforming to 25D female configuration. As this port is also used for an external disk drive, it is either printer or disk drive unless a splitter box is fitted.

The serial port is an RS232C programmable asynchronous port and has a 9-pin D male connector. If the serial port isn't to be used for comms or suchlike, connection to ■ serial printer offers a workable solution if the parallel port is in use with a disk drive.

The monitor/display connector is the normal 9 pin D connector and allows the display to be echoed to a standard colour monitor. The LCD screen has a 1.4 aspect ratio and display characteristic of 200x640 pixels in graphics mode and 25 lines of 80 characters in text mode. The LCD screen is of standard reflective type.

With a fully charged battery, Epson claims NiCad has a life of five to seven hours usage. Depending on

Power portables needn't break the bank. Keith Pomfret searched the world of advertising and found one at an incredibly cheap price.



• Unbelievably cheap – the Epson Equity hard drive laptop.

hard drive access, we found a more reasonable time to be two to four hours. With a disk intensive application, a couple of hours had the warning light winking, but simple word processing with drive access every 15 minutes or so almost doubled that. The mains unit works from 200/240v AC and puts out enough power to recharge the 9.6v NiCad battery pack while running the machine, although it charges more quickly if it isn't in use.

CPU AND MEMORY

The processor in the LT is the NEC V30 switchable between the standard XT rate of 4.77MHz and a turbo 10MHz. ROM is 16K and RAM is standard 640K with parity. There is no provision on the main board for memory expansion.

SIZE IS EVERYTHING

The Equity LT is quite a lump by laptop standards. It is 12.2 inches x 13.6 inches x 3.2 inches. The basic hard drive model that we reviewed was 6.22kg. The LT opens up in the traditional clamshell mode to reveal a good solid keyboard. The keyboard is of high quality and unlike many of the smaller models, doesn't cut corners. It is an 85 sculpted key unit and unusually for a laptop has a proper numeric keypad. There are 10 definable function keys, 17 keys in the numeric/cursor cluster and 58 keys in the QWERTY layout.

The LT is heavy and the handle was designed in the days before Epson had heard of ergonomics. This

might have been a problem, but for the low price and anyway, UK Home Computers are bundling a carry case with the LT so the handle won't see much use.

As it comes the LT has a standard LCD CGA screen. A backlit version ■ available as an option as is a converter to allow connection to the cigar lighter in a car (or cigarette lighter if it's a cheap car).

The backlit screen is a full transmissive type.

SOFTWARE

The Operating System that comes with the Equity LT is MS/DOS 3.3. This is still preferred by many who have not come to terms with the later 4.01 version. With a hard disk drive of only 20Mb the later version isn't needed for disk management as the internal hard disk doesn't exceed the 32Mb storage limit set by this earlier version of the operating system.

Also included is GW Basic. This popular variation of the BASIC language seems to be almost a statutory requirement with PCs and is a usable, if not much used environment.

The Equity took everything that we threw ■ it software wise and its LCD screen was no worse or better than other similar machines. It drove a monitor with no problem and if you have need for a computer in the office and on the move and you don't require the use of expansion slots or a graphics standard better than CGA, the Equity LT could be ■ cost conscious answer. With a cheap CGA monitor you'd still be the best side of £650 and have a hard drive PC that could be used in office or out and about. The feature of the LT that makes this most workable is the 'proper' keyboard with a separate cursor cluster/numeric keypad and full travel sculpted keys.

The Epson Equity is cheap, sturdy, of good parentage and from an established company. The first hard drive lap top to break the £500 barrier is the best bargain that we have seen for ages.

Epson Equity LT Hard drive costs £499 plus VAT and includes carry case MS DOS 3.3 and GW BASIC. Contact UK Home Computers on 0793 695034.

On page 61 of Express 124, the telephone number for the PC Collection supplier was wrong. It should have read: The PC Collection is available from Millgate Resources on 0628 784001.



For Top Quality Products And Top Quality Service

We Welcome You To.....

Cottage Computers and Software

Dear Reader

With the flexibility of our service used across the board, many families and businesses are now enjoying their Computers and Software to the full, in the safe knowledge that if requested, we will support and advise them on all Computer Merchandise whenever possible. Each month we review a wide selection of the new Software available enabling us to offer product guidance to our customers. Also we update our already extensive database of software tips, game cheats and computer information covering the entire range of popular computers. Any customer can contact our office to request information and help with software and we will be happy to offer all the advice we can. This information can be given over the telephone but if there is an amount of copy paper involved then we respectfully request that you forward £1.00 to cover postage and paper, we will then research our product files and forward all relevant information available on to you. We are sure that you will appreciate the convenience and excellent value of this unique service.

Cottage Software AMIGA Top 15 Chart

Battle Master	£20.99
Chaos Strikes Back	£17.99
Corporation	£17.99
Days Of Thunder	£20.99
F-19 Stealth Fighter	£17.99
Hollywood Collection	£20.99
Midnight Resistance	£17.99
Midwinter	£20.99
Murder	£17.99
Nightbreed (action)	£17.99
Operation Stealth	£17.99
Rick Dangerous II	£17.99
Shadow of The Beast II	£24.99
Their Finest Hour	£20.99
Wings (1 meg)	£20.99

We offer a friendly, reliable service supplying Computers and Peripherals Leisure and Serious Software. Overseas orders very welcome. Full back up advice service. If we can help we will. All letters answered A.S.A.P. Please enclose 30p S.A.E. Thank you

COTTAGE COMPUTERS & SOFTWARE

RO. BOX 34 ROMSEY HAMPSHIRE
SO51 8YW 0703 740349

30p S.A.E FOR
PRICE LIST AND
INTRODUCTORY LETTER

ALL PRICES INCLUDE VAT.
PLEASE ADD £1.00 TO
YOUR TOTAL SOFTWARE
ORDER TO INCLUDE FIRST
CLASS POST AND PACKING
Thank you

FULL RANGE OF LEISURE AND BUSINESS SOFTWARE

* PRIZE DRAW *
ALL CUSTOMERS
WHO BUY FROM
COTTAGE
SOFTWARE
RECEIVE A
UNIQUE NUMBER
WHICH IS
ENTERED IN OUR
MONTHLY
SOFTWARE GAME
PRIZE DRAW

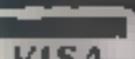
SOFTWARE TIPS/GAME
CHEATS REVIEWS AND
INFORMATION SENT ON
REQUEST JUST WRITE
OR PHONE FOR DETAILS

ORDER/ADVICE HOTLINE
0703 740342
MONDAY - SATURDAY
10AM UNTIL 7PM
ANSWERPHONE
AFTER HOURS

Leisure/Serious

Software
available for:
Amiga, Amstrad, Atari,
Spectrum, Commodore 64,
IBM PC compatibles
Game Consoles

CHEQUE POSTAL ORDERS
AND CREDIT CARD
FACILITIES
AVAILABLE



PD & SHAREWARE

who do you get yours from?



There are many PD libraries around but do they offer you....

- ★ Huge collection, thousands of programs on over 3000 disks
- ★ Same day service - 1st Class post - GUARANTEED
- ★ Knowledgeable staff on hand (no 'phone after six and ask for fred!')
- ★ Three years experience collecting and distributing PD & Shareware to satisfied customers all over the world.
- ★ Send £1.00 for catalogue - free with order - please request and state MAKE of computer CLEARLY.

AMIGA

Currently over 800 disks in our catalogue, including Pred Fish, APDC, AMICUS, PanoramA etc. Our own SOF collection is so good other libraries stock them now and of course we are exclusive distributors of the fabulous UGA disks. All are auto-boot, menu driven and so very easy to use, probably the best collection available! We also run an Amiga Club, ask for details.

ATARI ST

We currently stock over 800 disks full of PD/Shareware for these machines, containing every imaginable type of program! Choose from ALL the Public Domain, not just "a selection". If you are new to ST'ing why not join "Clubville", our popular user group, £6.50 gets you newsletters, offers, special prices on goods, 5% Off blanks/PD etc.

IBM PC

(and compatibles)

Thousands of the most popular Public domain and Shareware programs in our current catalogue, all available on either 3.5" or 5.25" format, if ordering (opposite) state which. Whatever type of program you may require, we've probably got it.

MEGA PACK - £19.50 (£14.50)

5 PD disks + 5 blank disks

plus a Library case

(Selection of current popular titles).

INTRO DISK - £1.50

(Atari or Amiga only)

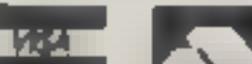
VIRUS KILLER DISK - £1.50

(state machine clearly)

(price is £1.00 for 3.5" disks, 5.25" preferred)

24 Hour orderline on

0705-266509



SOFTVILLE

Unit 5, Stratfield Park,
Electra Avenue, Waterlooville,
Hants. PO7 7XN

AMIGA 500 MAMMOTH ½ MEG UPGRADE

LATEST DESIGN INCORPORATES 'CHIPMEN' OPTION AT NO EXTRA COST!

- Increases computer memory from 1 megabyte to 1.5 megabytes
- Includes disable switch to prevent damage to the 1.5 megabyte coated pin connector
- 16 bit technology
- Fit in minutes
- Direct replacement of Commodore 6501 expansion
- Includes "CHIPMEM OPTION" - RAM for extra memory
- 12 month warranty
- In stock now!

£29.00

Price includes VAT and postage
and packing

Tel: 0582 491949



BRITISH MADE

Also available
with auto recharge
battery clock

Send order with payment to:

WTS ELECTRONICS LTD, Chalk End Lane, Luton, Beds LU4 8EZ

GAMES WEEK

GAMERS' GUIDE

This week Entertainment International seems to be having a bit of a bonanza, and is announcing no fewer than five titles which they expect to see on sale this year. Its most prestigious must be *Wrath of the Demon* from Readysoft, the brains behind such games as *Dragon's Lair* and *Space Ace*.

But why is *Wrath of the Demon* any different from the aforementioned games, which, let's face it, were not exactly the most interactive of pastimes, were they? Well, at long last Readysoft is able to do justice to its particular game-style, using the advanced hardware inside the Amiga CDTV system. *Wrath of the Demon* utilises the massive storage space inside the new machine to stack away over three megabytes of graphics. That amounts to a cool 600 screens-worth of action, plus 1,400 frames of animation, with more than 100 colours on-screen!

The game conforms to the usual wafer-thin plot; you have to help the hero kill the evil demon whose henchmen are trashing the kingdom and get off with the gorgeous princess. Oh well, at least it promises to be colourful. No dates available for release yet, but Games Week will keep you posted.

A slightly less mega-techie title is *Eye of the Storm*, a 3D vector-graphics space-game.



GAMES WEEK

Neil Jackson gives you the low-down on the latest new games, playing tips, cheats and news.

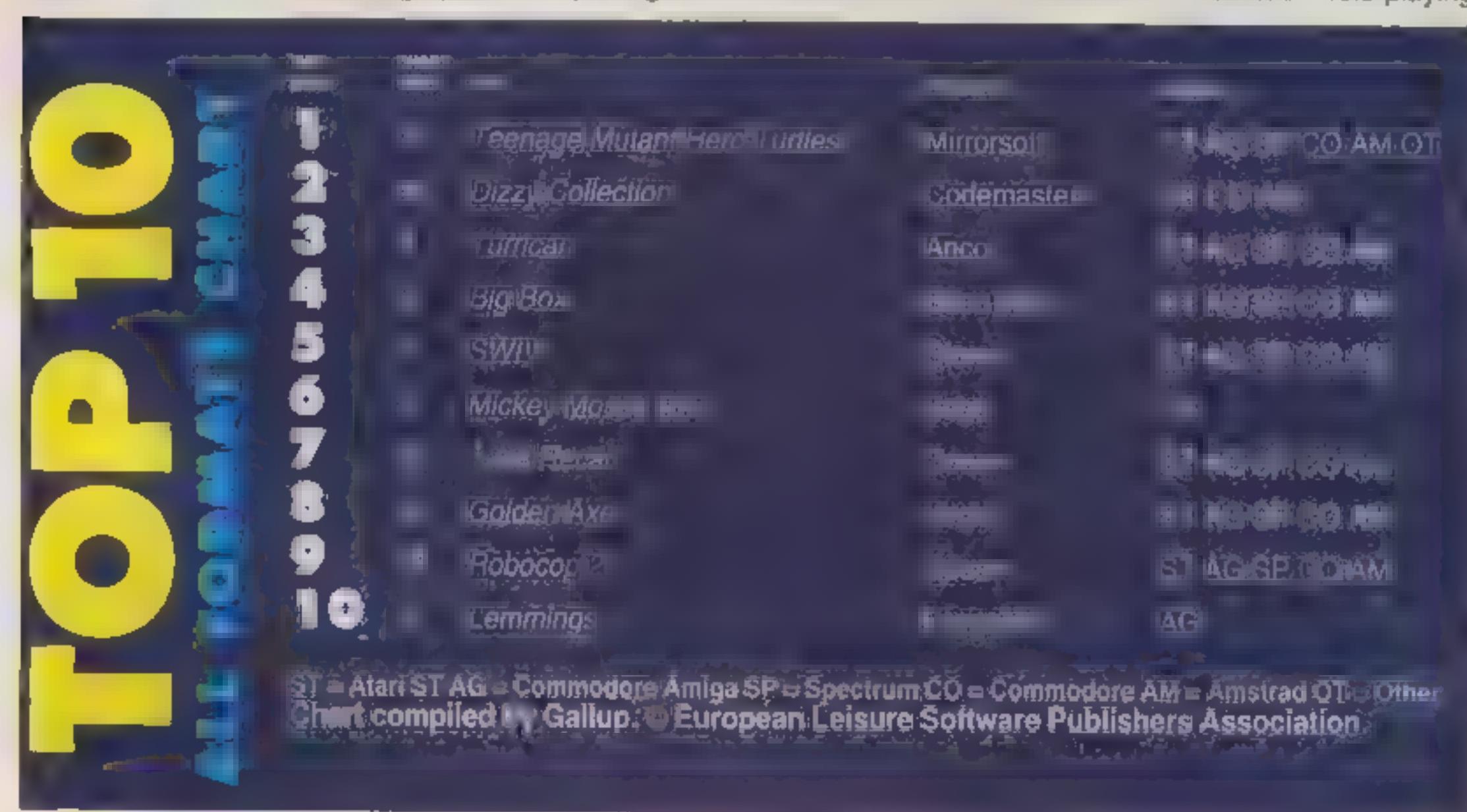
Entertainment International says it features over 120 different types of objects, including fish, plants, mammals and faces. There are even a few techno-advancements in this too: underwater scenes are accompanied by realistic sound effects, and Gouraud shading is used to give the objects in the game true 3D appearance. ST, Amiga and PC owners can look forward to this sometime in September this year.

San Francisco in the late 21st century seems to be a popular place and time for game-scenarios at the moment. We have already seen *The Killing Cloud* from Vektor Grafix, and now it's time for *Cyber Space*, Entertainment International's futuristic role-playing

game. In darkest 'Frisco, the natives are revolting (cue obvious joke) against the rule of the MegaCorporations. Punks and Netheads are laying waste to media stars and Cybernetic mercenaries in an attempt to stop the corporations from controlling the world by television, radio and print. *Cyber Space* has complex rules of travel, combat and espionage, which suggests it's a deeply-involved strategy-game. You can create a wealth of characters and develop and enhance them as you progress. Look out for this in October, on PC, ST and Amiga.

Still in the Sci-Fi roleplay vein, Entertainment International is releasing *MegaTraveller 1 - The Zhodani Conspiracy*, during April on ST, PC and Amiga. This features sophisticated character generation, with five military classes and more than 70 talents and abilities. Eight different solar systems contain 28 planets where you will find all kinds of puzzles, subplots and interesting encounters. You have more than 30 weapons systems at your disposal, but will you have the skills to use them? Medicine, flying, communications, bribery and laser-armaments are all areas which you can learn about to help your character. Aficionados of the *MegaTraveller* board-game system will already be aware of the depth and quality of the system - newcomers will find it a powerful introduction into the role-playing genre.

Finally, the company has announced *Volflev* - the Taito coin-op conversion. This simple but addictive shoot-'em-up features giant crabs, killer ladybirds and an eyeball-spewing head! I wonder if there's any plot? Look out for this in June for PC, ST and Amiga. ■



POPULOUS

Amiga and ST

Start each game by using Raise/Lower to make at least one large castle. Place the Shield icon on the castle's flagpole and wait until the green strength bar reaches halfway. Then raise the land at one corner of the castle to kick out the traveller. When he's out, lower the land again to rebuild the castle and then repeat the whole process. With this method you have more manna and more travellers to work with.

When you are about to Knight your leader, place the Papal Magnet on a clear piece of ground and raise the land into a cone, about three levels high. Then select Go To Magnet and search your land for castles. Once a

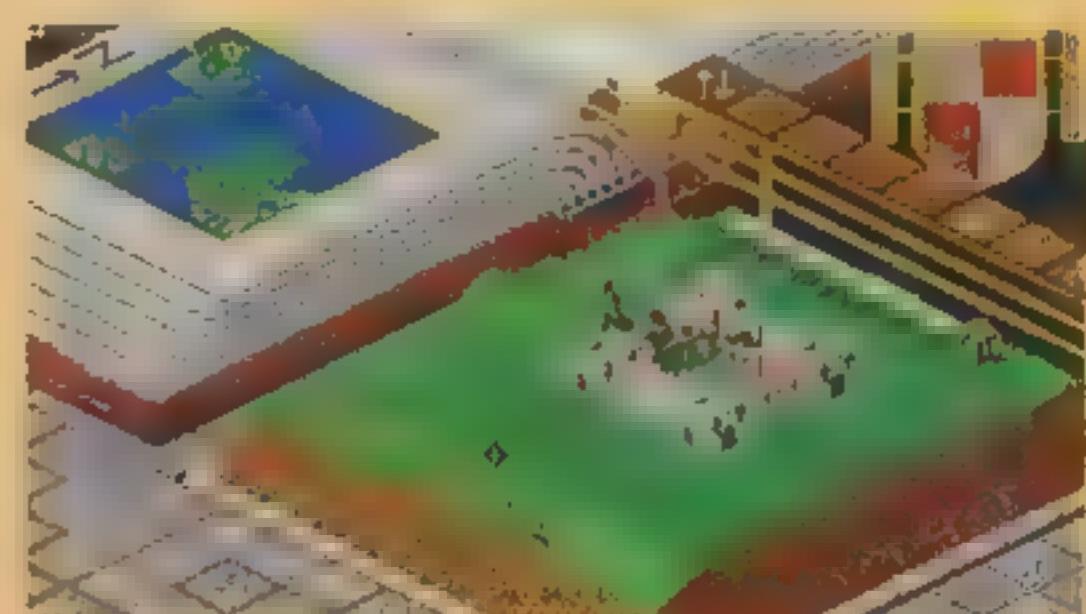


traveller has been evicted, raise the land at one corner and then immediately lower it to regain the castle. Go back to your leader (who will now be considerably stronger thanks to the increased absorption of travellers) at the Papal Magnet. Check the place for swamps - the leader should be okay if he's on a cone, as only flat land can be swamped.

When you and the computer are closely matched and have similar forces, go to the area on the map where your buildings and his meet. Go as deep into his territory as you can while still retaining at least one of your houses on screen. Then raise the land as far as you can (at least four levels) to totally wreck his buildings. This is actually more useful and costs less manna than a volcano, plus you can reclaim the land later without having any rocky lumps to worry about.

After the computer has Knighted, if you are still low on strength follow the knight around and destroy your own buildings before he reaches them. In this way, you slightly lower the knight's energy each encounter, without letting him destroy the land around the buildings. This makes rebuilding easier. A strong leader can kill a weak knight, so follow the knight about with the Papal Magnet and select Go To Magnet while kicking your people out of the castles. Don't miss an opportunity

Tip of the Pops



to dunk a knight in water (by dropping the land under him) as this also decreases his energy, especially in the earlier levels.

Often, the computer will swamp a large mass of your land and the first warning you get is the sound of drowning people. Pause the game as soon as you hear this, and look around for your Papal Magnet. It's likely to be the central point of the swamp. If the area's too big to deal with by normal Raising/Lowering, just earthquake the whole lot. The swamps disappear, and you are left with a more simple repair job.

Knight your leader as soon and as often as possible (even if it looks like you are losing). You collect loads of points for knights, though slightly less than using the Armageddon option.

PLAYING TIPS

BRAT

Mirrorsoft £24.99
AMIGA and ST

After the usual sequence of software house ident and programming team credit, there follows a short animated sequence which puts Brat head, shoulders and nappy above the rest. Complete with crisp sampled sounds, you witness the small angelic Nathan turn into a streetwise dude with an excessive baseball cap and shades. "Time to party, dudes," he cries before plastering the screen with the game's title using his squirt gun.

Next is the game's main menu, where you will find three different types of demo, a password-to-level entry system and the main route into the world of *Brat*. You can choose which part of the world you see in the demo and then sit back and listen to the excellent in-game tune whilst picking up a few playing tips from the invisible hand which leads Nat the Brat through part of the demo level. When you reckon you have cracked the methods involved, you can enter the game, but always in the same place - Toyland.

Here your task is to direct Nathan safely through a toy-infested route by placing arrows in his path. The game's isometric 3D layout can force you to look twice at everything to start with, but you soon get used to working out straight paths in all directions. Then you click on the toolbox panel, selecting and placing the right icons to make Nathan turn at the corners, or pause him momentarily to gain a bit of route-deciphering time. Most of the time he will just toddle along, collecting bits and pieces as he goes, occasionally booting a toy or two out of the way. The bits he picks up you can use, and there are all kinds of things you need. For example, Nathan will pick up dynamite for blowing up track-blocking rocks, and weights for holding things down. But it is up to you to work out where to use them.

Meanwhile, as you are busily trying to crack all the logic puzzles, time is marching on. Time, in the form of the upward-scrolling screen, can be halted (providing Nathan's picked up the right bits), but only for a short while. If Nathan gets too close to the top of the screen (or worse still, goes beetling off in the wrong direction) he will be knocked off.

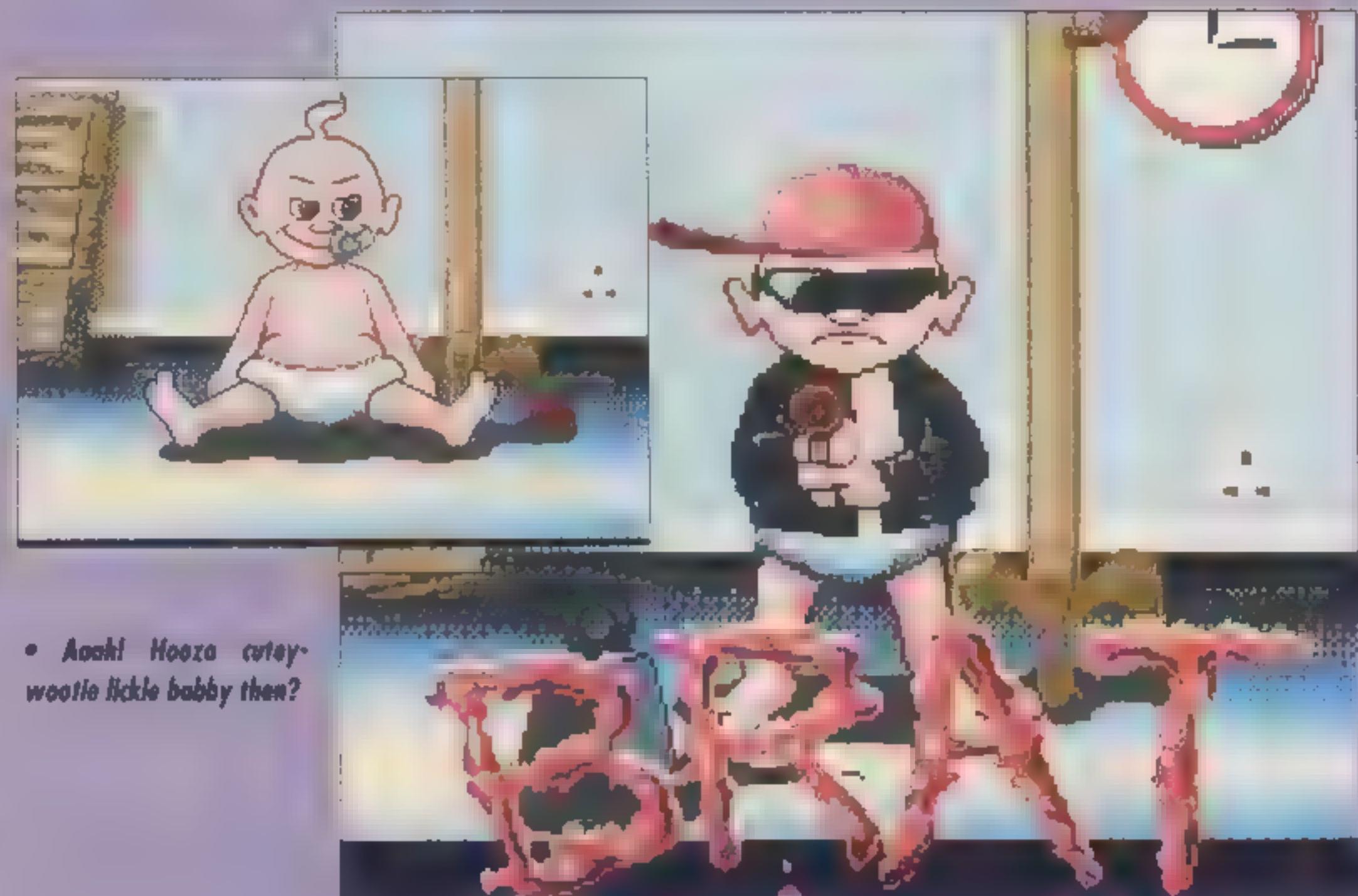
Sometimes keeping Nathan on the right tracks is nigh-on impossible. Occasionally, there is not even a track at all! Then you need to include bridge-building in your repertoire, as well as direction-finding. Later levels include sliding bridges which can spell disaster unless you have Nathan under perfect control. But even perfect control can elude you - each direction sign, stop signal, and bridge-part costs money which Nathan has to collect in the form of coins and gems. And if you can't direct Nathan to pick it up, well...!

There is really a lot to contend with, and your first few attempts are likely to be punctuated with cries like,



• Mess it up and Nathan falls off the edge of his dream-world. Babysitting was never fraught with this much danger before!

Romper rogue on the road

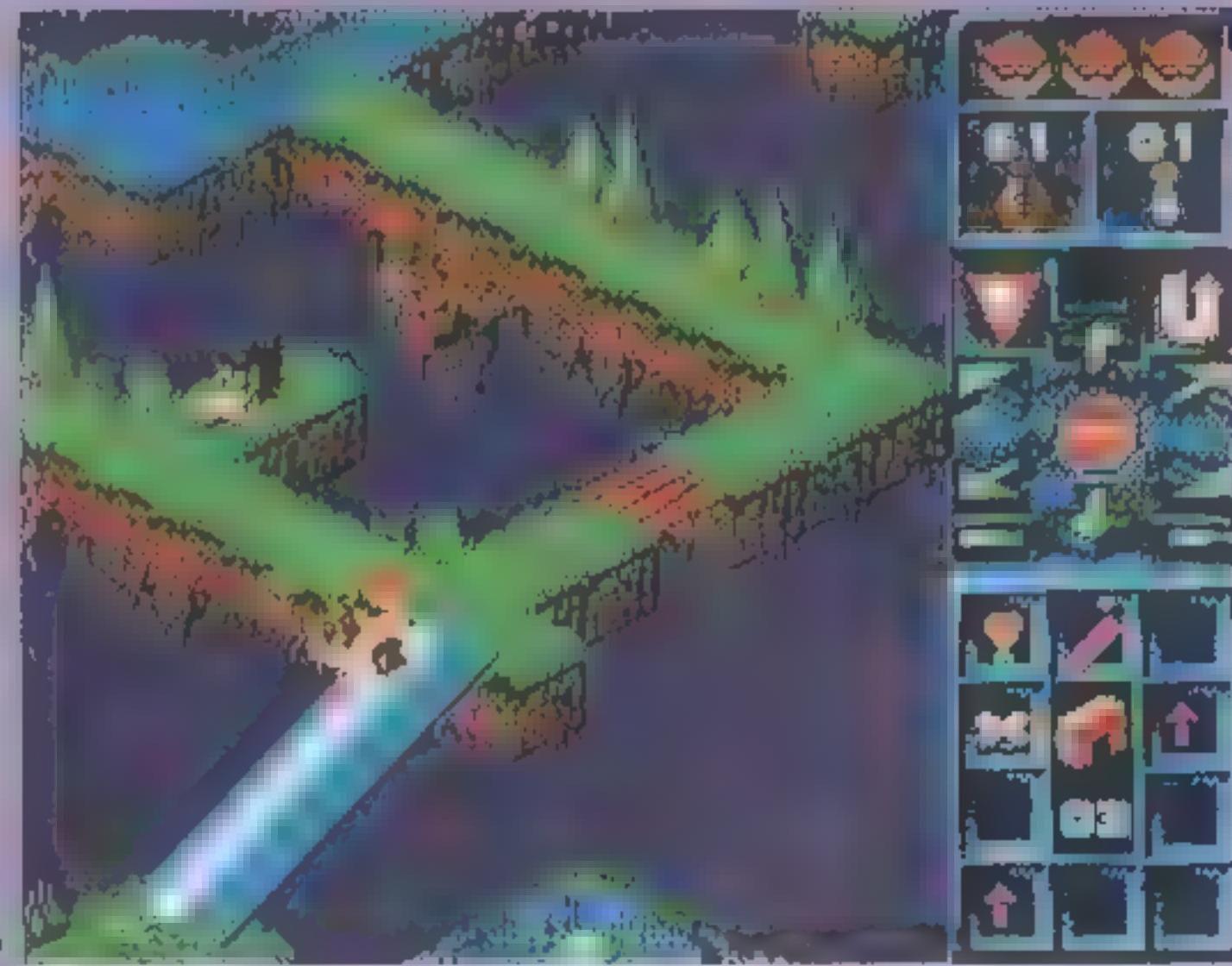


• Aaah! Hooza cutey-wootie nikkle bobby then?

• Er! Certainly not Nathan, the supercool infant terrible, star of *Brat*.

"Ah, but I know what to do next time...", until you find you have been at it for ages. *Brat* is definitely one of those games that calls you back time after time, especially when you actually get to see Nathan's lives run out. Being put down by a one-year-old infant shatters your self-respect and makes you want to prove yourself!

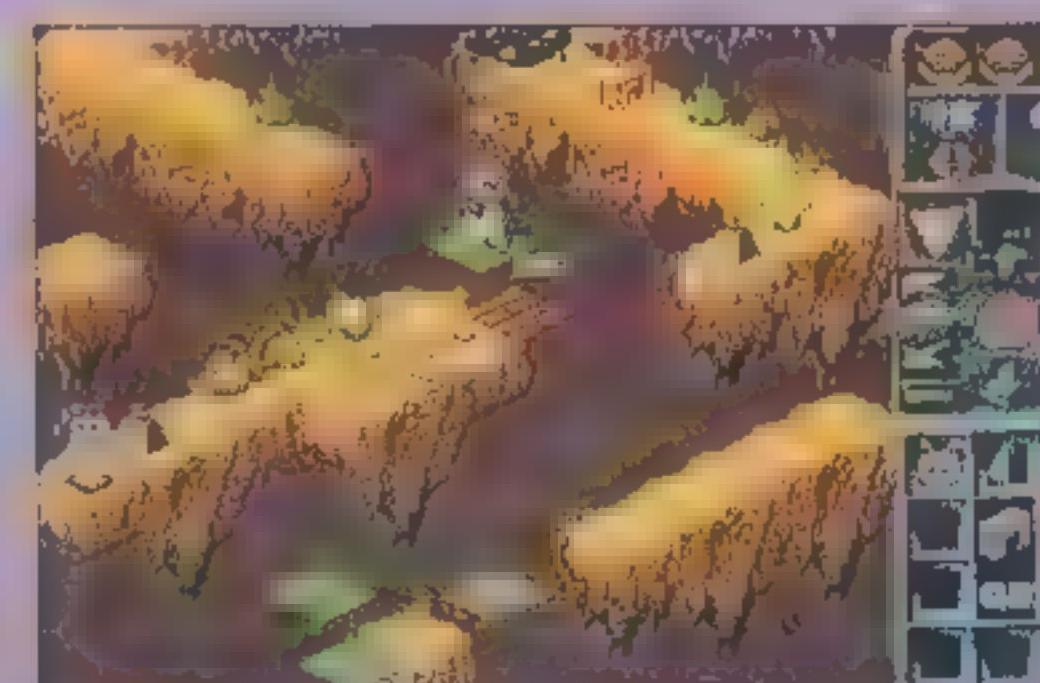
Most games are made from hard slog, late nights and plenty of coffee. *Brat* looks like one of these but it has an extra ingredient: it is a concept which has been thoroughly worked through on every level! Even the voices in *Brat* are the voices of a real mum and her son! From start to finish, *Brat* is an enjoyable, amusing and beautifully polished piece of entertainment which reflects the care and attention that has been lavished on it. Now that's what real games are made of.



• Wheel Where else would you find a slide, but the Park? Beware of the fat rotweillers who give chase, and keep an eye open for killer sharks in the boating pools.



• Direct Nathan through the Moon Base, where robots roam and giant pits open up underneath his tiny feet.



• The contents of Nathan's toy cupboard have escaped. Get through Toyland, dodging the Jack-in-the-Box and the Tin Soldiers.

SOUNDTRAP 3 AUDIO SAMPLER

1. HIGHEST QUALITY
2. SMALLEST ON THE MARKET
3. FITS A1000 OR A500/2000
4. PRINTER PASS-THRU
5. GAIN CONTROL
6. SOFTWARE, SCREWDRIVER & LEAD INCLUDED.
7. COMPREHENSIVE MANUAL



37.50
SOUNDTRAP 3
29.95

45 Meg A590 **429.95** 130 Meg A590 **629.95**
90 Meg A590 **529.95** 179 Meg A590 **729.95**

MINI-MIDI INTERFACE + SOFTWARE

1. HIGHEST QUALITY
2. SMALLEST ON THE MARKET
3. FITS A500/2000/1000**
4. DATA INDICATORS FITTED
5. 2 METRES CABLE BUILT IN
6. FULLY OPTO-ISOLATED
7. TRIED & TESTED DESIGN



24.95
MINI MIDI
19.95

* A1000 REQUIRES SPECIAL ADAPTER

THE A590 HARD DRIVE IS ALSO CAPABLE OF TAKING 2 MEGABYTES OF RAM. IF PURCHASED AT THE SAME TIME, JUST ADD £5.00 TO TOTAL.

AMIGA A500 BASE PACK

329.95

AMIGA A500 SCREEN GEMS PACK

374.95

AMIGA A500 1 MEG BASE PACK

352.95

AMIGA A500 1 Meg SCREEN GEMS PACK

397.95

A500 REPLACEMENT INT. DRIVE	£64.95
A2000 INTERNAL DRIVES	£59.95
A3000 INTERNAL DRIVES	£59.95
45 MEG SCSI 3.5" HARD DRIVES	£39.95
90 MEG SCSI 3.5" HARD DRIVES	£49.95
136 MEG SCSI 3.5" HARD DRIVES	£75.95
182 MEG SCSI 3.5" HARD DRIVES	£135.95
A590 CMOS RAM CHIPS (5120)	£25.00
B2000 18 PIN DRAMS (2Meg)	£109.95
256'1 DRAMs 150ns	£9.95
13 ROMs	£34.95
A3000 RAM 256'4 80ns 1MEG	£65.95
A3000 RAM 1024'4 80ns 4MEG	£299.95

AMIGA A1500 COMPUTER
INCLUDING SOFTWARE NO MONITOR **699.99**
INCLUDING SOFTWARE & MONITOR **1099.99**

ALL PRICES INCLUDE VAT @ 15%

512K WITH CLOCK + SWITCH	£32.95
IN500 WITH 1.5MEG INSTALLED	£99.95
SIN500 OK	£85.95
SIN500 WITH 2MEG INSTALLED	£175.95
X RAM OK (FOR A500/1000)	£175.95
X RAM WITH 2MEG INSTALLED	£275.95
X RAM WITH 8MEG INSTALLED	£520.95
OCTABYTE OK (FOR B2000)	£140.95
OCTABYTE WITH 2MEG INSTALLED	£249.95
OCTABYTE WITH 8MEG INSTALLED	£499.95
INMATE OK + SCSI-68881 SOC.	£284.95
INMATE + 2MEG + SCSI-68881 SOC.	£360.95
KCS POWER CARD (PC Emulator)	£229.95
AT-ONCE CARD (PC/A) Emulator)	£195.95
5.25" EXT. DISK DRIVE (40/80 TRIO)	£109.95

68030 ACCELERATOR CARDS
FIT A500/2000/1000 FROM
339.95

CALL FOR THE KEENEST PRICES
ON THE FASTEST 68030 AVAILABLE

ALL CHEQUES, P.O., ETC
SHOULD BE MADE PAYABLE
TO OMEGA PROJECTS.
WE ALSO TAKE ACCESS,
VISA, MASTERCARD &
EUROCARD.

512K RAM
inc. CLOCK & SWITCH
24.95
21.95 NO CLOCK

FATTER AGNUS
CHIPS
NOW IN STOCK AT ONLY
59.95
WHILE STOCKS LAST

68000
14MHz SWITCHABLE
42.50
NOW PCB MOUNTED

0925-763946
FOR ORDERS & TECHNICAL QUERIES

0860-795260
WE ARE OFFICE OF THE OFFICE
OPENING TIMES:
MON - FRI : 10.00 am - 6.00 pm
SAT : 10.00 am - 5.00 pm

HAVE YOU GOT AN A590 HARD DRIVE THAT IS NEARLY FULL?
IF SO, DON'T DESPAIR WE CAN UPGRADE YOU!!!.
IF YOU ARE STILL UNDER WARRANTY, THEN YOUR OPTION
IS TO EXPAND EXTERNALLY, AND IF YOU ARE NOT, THEN EXPAND
INTERNAL.....

EXTERNALLY

45MEG	£339.95
90MEG	£449.95
136MEG	£575.95
182MEG	£635.95

INTERNAL

45MEG	£259.95
90MEG	£369.95
136MEG	£495.95
182MEG	£555.95

REPLACEMENT
A500
INTERNAL DRIVE
54.95

512k RAM

INCLUDING CLOCK & SWITCH

(RRP 27.95)

FEATURES

16 CHIP DESIGN (as Commodores own)
100% COMPATIBLE WITH a501C
INCLUDES CLOCK
INCLUDES ON/OFF SWITCH
DESIGNED & BUILT IN THE U.K.
FITTED IN SECONDS
CORRECTLY PRICED
WILL CONFIGURE AS CHIPMEM
12 MONTHS WARRANTY

FOR LIMITED PERIOD

24.95

VAT included

21.95 Without clock

(RRP 24.95)

HARDWARE

HARD DRIVES

Life's never been the same." "I don't know how I got by without one". "It transformed my whole way of working." "Give me back my hard drive or I'll extract your lungs through your nostrils."

These are just some of the responses you're likely to come across when you ask the average hard disk owner what difference a small magnetic platter made to his computing life. So what's the big deal?

Well, with some computers you just can't get by without one - the Mac immediately springs to mind here as its operating system has to be loaded off disc every time you want to do... well, anything. Okay, the ST's much better supported in this respect as all calls and functions reside in ROM, but it's still a drag to search through trays of disks for that essential utility you need right... now.

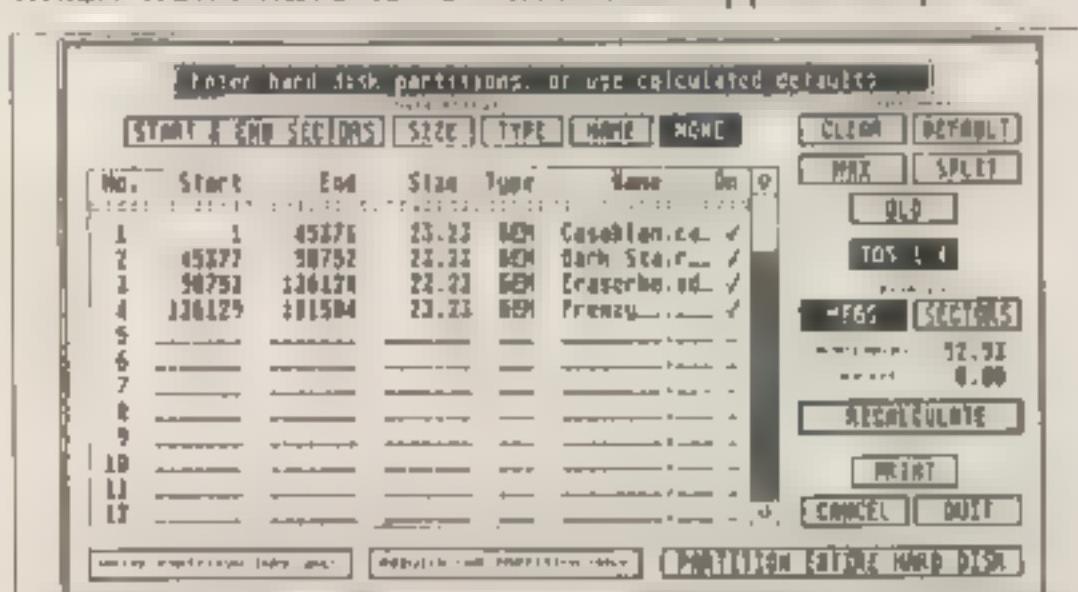
Also, floppies tend to go down far more often than hard disk - so much so that they're best regarded as temporary media - and in addition, these days even games software comes on so many disks you're changing between them left, right and centre. Finally, loading off hard disk is so much faster than floppy - and we don't need comparative timings to prove that do we?

No. (But in case you're wondering the answer's 11ms.)

HARD DRIVING

So in the meantime you might like to take a look at one of the Quantum hard drives available from Ladbroke: either the 52Mb for £420 or the 105Mb for £530. These are both 3.5 inch mechanisms, with their own power supplies, and come in plain cream cases.

The external power supply means that they're not trying to suck any more current from the already over-worked ST power supply. This is good news for your ST which won't have to run above its approved specifi-



From the ICD Handbook, the menu for drive partitioning

tion and, more independent, good news for the hard drive. The independent power supply offers the Ladbroke drive (shouldn't that be Ladbroke Grove... Ed) smoother and more stable power than if it were trying to overdrive the ST's internal power supply.

They also feature DMA Out ports which means, if you're so inclined, you can daisy-chain up to eight SCSI devices to each other. With up to eight hard drives and other SCSI devices hanging off the back of your ST, it's good to know that the controller can work in octopus mode. This single controller can manage up to 255 partitions occupying one gigabyte of storage space.

This kind of partitioning means that you can divide

SCSI HARD BARGAINS

Buying a hard disk off the shelf can be a hard decision to justify, if only in terms of price. Instead, why not build one for your ST? Andy Storer test drives Ladbroke's 105 Mb hard disk.

all those Mbytes up into logical devices, each occupying say 10Mbs, which can be assigned different drive names. As such, Drive C could hold all your ST system software while D holds the Spectre GCR Macintosh emulator and Drive E one of a choice of PC emulators.

This logical approach to device assignation can also be used to compartmentalise a drive for different applications. Logical drive D: could be for word processing, E: for DTP, and so on, making it easy to keep track of files in mass storage.

The great rush toward single logical devices on the PC brought by the later versions of MS/DOS hasn't necessarily made PC computing easier and even with later versions of DOS, many users are returning to the use of small logical devices rather than a single physical one.

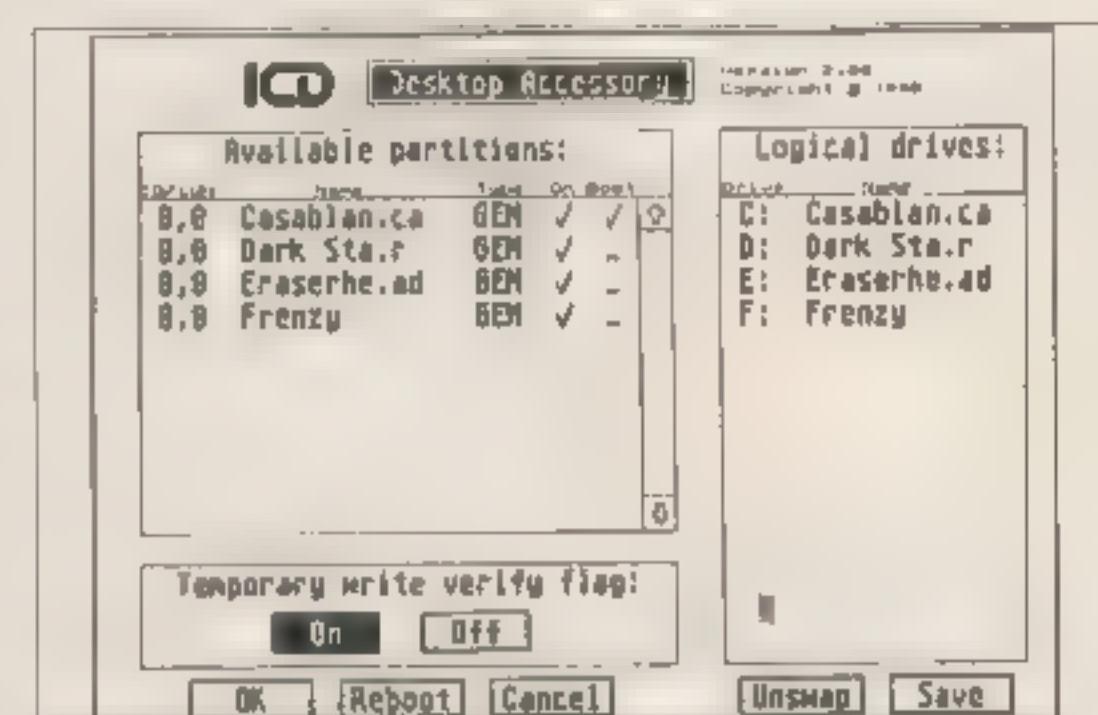
ACCESSORIES

There are a useful suite of utilities provided with the Ladbroke drive. Although the ICD disk (double-sided, incidentally; return it and a single-sided replacement will be sent free of charge) is supplied already formatted there's a program which does this job, allowing you to customise the disk format to your use.

A small elegant wad of code performs the function of enable and disable for the autoboot function, thereby leaving this decision in the hands of the user - not the machine.

To make total control of the hard disk environment a reality, there's a desk accessory that allows up to 16 partitions per drive to be selected, switched on and off, renamed, etc, while on the fly. And an access prevention feature can protect data from prying eyes and small fingers.

The 11ms access time of the Ladbroke drive is attained in two ways. First, the drive has a rapid (typi-



• And, from the same source, the Desktop Accessory menu.

cally 20ms) access time. A RAM disk cache optimises this so the perceived speed is the 11ms claimed.

Finally, the documentation provided is a slim A5 manual that takes the user through each step of installation use and feature in a simple to follow form.

SOFT OPTIONS

ICD hard drive kits start out around £70 and basically supply you with everything except the hard disk itself. These you can pick up as bare items from a company like UK Home Computers on 0793 695034 for around £100 for a 20Mb unit. The ICD comprises the Host Adapter, allowing you to communicate with other SCSI devices, the controller and shielding, the casing, a fan, a power supply unit, the required cables and the mounting hardware. This DIY enterprise is not difficult and will be a Circuit City project in the near future.

Finally, are you wondering whether £420 for 52Mbs of storage space isn't just a little expensive when a 1Mb STE only costs £370? Perhaps. But think of the advantages and, once you're convinced, shop around. ■

HARD ALTERNATIVES

If you fancy some hard driving of your own, here's a list of suppliers and contacts:

Ladbroke (0772 203166):

3.5 inch hard drives: 52Mb, £420; 105Mb, £530

Full Circle Technologies (0622 677173):

Vortex Datajet hard drive and AtOnce PC emulator £535

Power Computing (0234 273248):

Slimline hard drives: 20Mb, £325; 40Mb, £425; 110Mb,

£599. Build your own interface units from £69 up to £99

Rewritable optical drives: 600Mb, £2,995 (with additional magneto-optical removable cartridges at £249

each - any chance of some review kit at long last fellas?)

Evesham Micros (0386 765500):

NEC hard drives: 40Mb, £399; 100Mb, £599

Atari Megafile: 30Mb, £439; 60Mb, £589

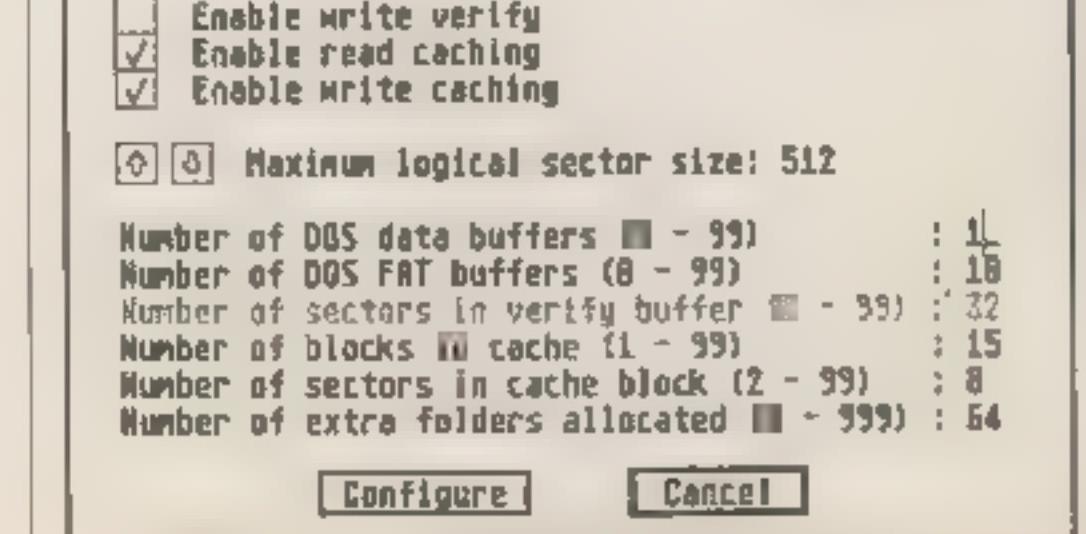
FirstChoice (0532 637988):

Atari Megafile Removable 44Mb, £799

Other Megafiles as above. ICD 40Mb, £489. Vortex 40Mb, £520

Best Prices Mail Order (0903 700714):

Atari Megafile 30Mb £389, 60Mb £530.



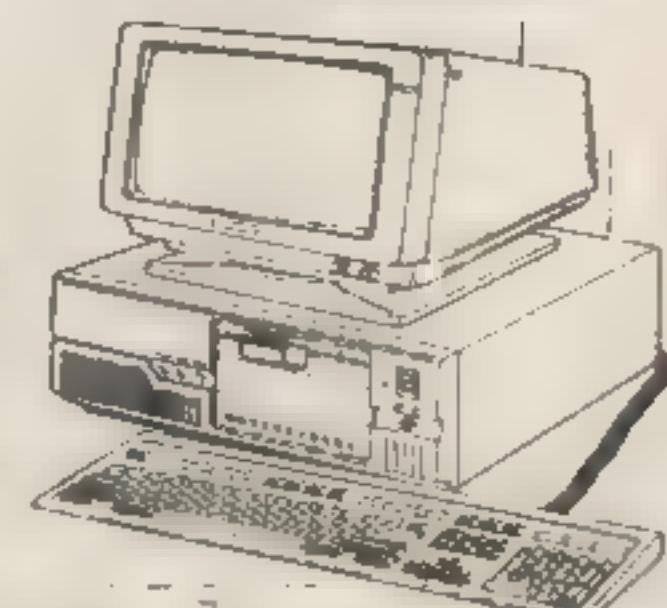
• The menu for configuring the ICD Hard Disk Drive.

UK HOME COMPUTERS

PC / AT 286 - 16MHz.

80286 Processor @ 8/16MHz, 200 Watt PSU, 102 key keyboard, AMI Bios, 8 Internal expansion Slots, 1 Mb RAM, expandable to 8Mb on-board (SIMMS), 1.2 Mb floppy disk drive, 2 Serial & 1 Parallel Port, Real Time Clock with battery back-up, 3 disk drive slots (for Hard Disk/Tapestreamer etc.), MS-DOS 3.3 & GW-BASIC 3.2. This price doesn't include a monitor or Graphics Card.

Graphics Cards available from £29.95p to £89.95p.

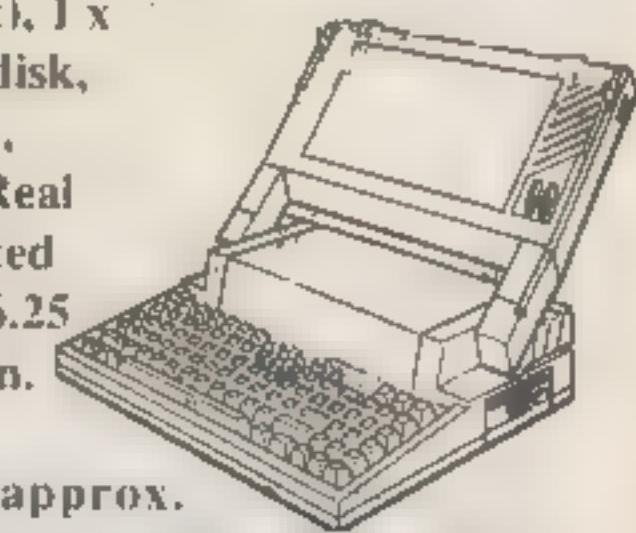


£449.95p

inc. VAT (carriage £15.00 Overnight)

EPSON LAPTOP/HARD DISK

4.77/10MHz V30 Processor, 640K RAM, 1 Serial & 1 Parallel Port, CGA external Monitor port, (standard 9-pin output), 1 x 720K 3.5" floppy disk drive, 1 x 20MB hard disk, rechargeable ni-cad battery (5-7 hours usage), mains adaptor, MS-DOS 3.3 & GW-BASIC, Real Time Clock & Battery Back-Up, 85 key sculpted keyboard with 10 function keys, weighs only 6.25 kg. & measures only 310mm x 345mm x 79mm. Complete with soft carry case. Full IBM Compatibility. Recommended price approx. £1500.00p



£499.95p

12 month On-site warranty available from only £25.00p

plus VAT (Total inc. Carriage £574.95p)

HARD DISK BONANZA

90Mb 5.25" Half-Height (badged EPSON). Access time 18ms, 1024 cylinders, 5 heads, 36 sectors. Complete with ESDI controller (16 bit), cables, & formatted. Usual price over £600. Our special limited offer price is just £299.95 inc. VAT

SEAGATE DISK DRIVES

ST 225 20mb(65ms) £159.95p*
ST 251-1 40mb(28ms) £199.95p*
ST125 20mb(40ms) £189.95p

* denotes 5.25" half height drives

Seagate Disk controllers £34.95p inc cables
Postage per Disk Drive £4.05p

AMSTRAD NETWORKS

The complete package to enable you to link upto 3 PC's together. The package consists of 3 interface cards, Junction boxes, cables, software & full documentation. Based on the "Corvus" design, this package is very powerful & professional. Originally made to sell at £400.00p plus VAT, our special price, while stocks last, is just £149.95p inclusive of VAT & Postage.

£149.95p

PC Software-To Clear:-

Wordstar 1512 Wordprocessor/ Supercalc 3.1	£29.95p
Spreadsheet & AccountMaster	£29.95p
Microsoft WINDOWS 286/386	£29.95p
Postage £3.05p	

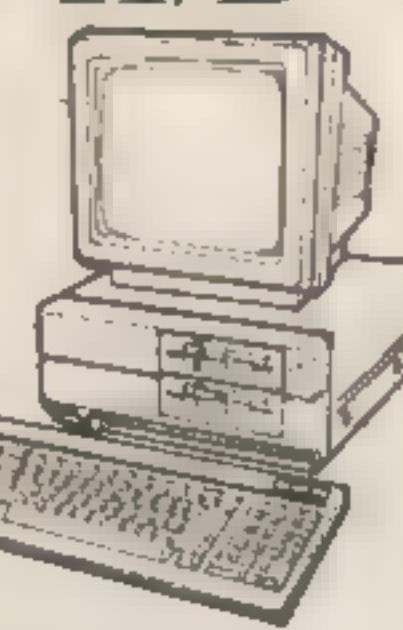
PC HAND SCANNER

Manufactured in Korea. 3 resolution levels, 400/300/200/ dpi selectable. Line Art & Halftones, 16 grey levels (ideal for photographs). Ideal for capturing and editing logos, artwork, text, signatures, cartoons, photos etc. Files can be saved in .TIF (for Pagemaker), .PCX (PC PaintBrush) and .MSP (Windows Paint), plus... Superimposition images can be placed over & alongside other images. The package contains the Handy Scanner, XT bus interface, Acer Scan Studio Program, User Manual & Operator's manual.

£89.95 postage & packing £3.05p
MS Windows is required

PC/AT 286-40MB H/D

Made by SAMSUNG. Model MFC 6000/1. Usual selling price around £800.00p plus VAT. Features include 80286 processor @ 10MHz, 1Mb On-Board RAM (Expandable), 11 Expansion Slots, 1.2 Mb 5.25" High Density Floppy Disk Drive, (Room for 2 additional drives), 102 key keyboard, battery back-up, Hercules/Monochrome graphics Card, Serial & Parallel Ports, MS-DOS 3.2 & GW-BASIC. Philips 12" Green Screen Tilt & Swivel Monitor, & 40Mb Seagate Hard Disk.

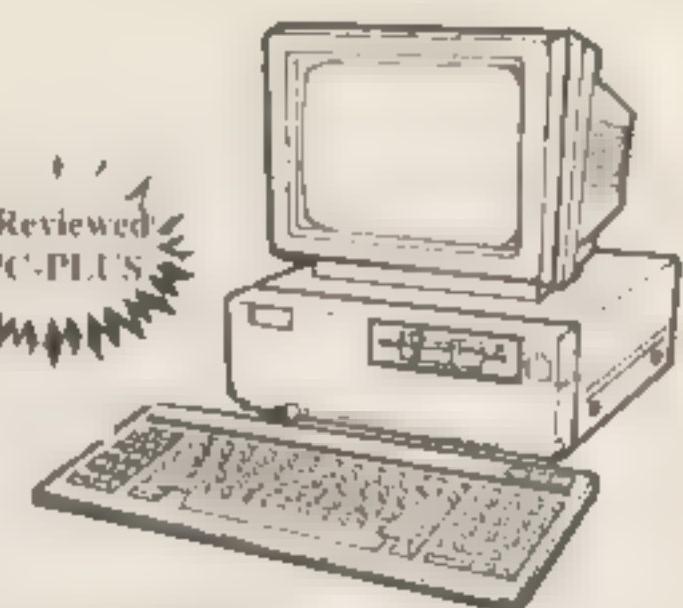


£599.95p

This price includes VAT, but please add carriage £15.00p.

PC/XT FOR UNDER £300

8088 Processor @ 8 MHz, Serial & Parallel Port, 8087 Socket.
1/2 Mb On-Board RAM (Expandable)
1x360k 5.25" FDD (Space for second)
Mono/Colour Graphics Card
2 Conventional Expansion Slots
Space for Internal Hard Disk Drive
MS-DOS 3.3 & GW-BASIC 3.2
102 Key Keyboard made by EPSON
12" Mono Monitor

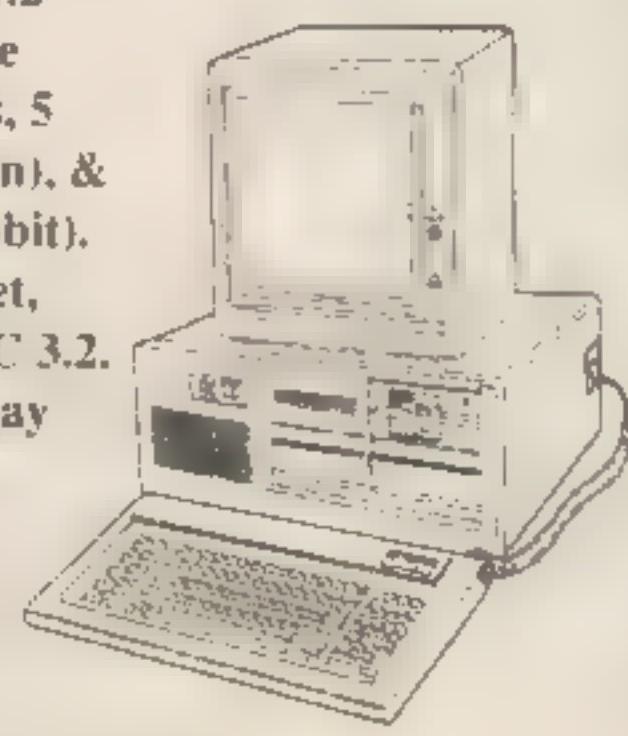


£299.95p

inc. VAT & Carriage
Send or phone for other options

BEGINNERS PC/AT 286

640k RAM Expandable to 2MB, on-board, 1.2 Mb 5.25" Hi-Density Floppy disk drive, True IBM Compatible, 1 Parallel & 2 Serial Ports, 5 Empty Disk Drive slots, (for future expansion), & 9 Empty internal expansion slots (8-bit & 16-bit). Also included is a Maths Co-Processor socket, Battery back-up, MS-DOS 3.3 & GW-BASIC 3.2. This price doesn't include a monitor or display card.



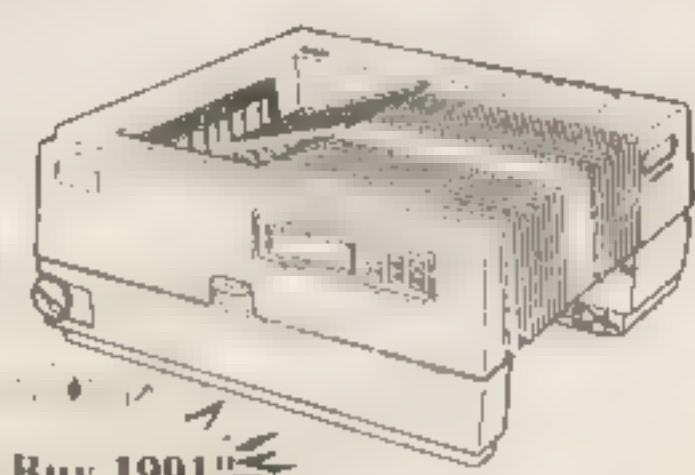
£299.95p

inc. VAT (Carriage £15.00 O/N)

Phone for options on graphic cards and monitors. Also we stock Hard Disk Drives at low prices.

HP COMPAT LASER PRINTER

512k RAM expandable to 4.5 Mb.
Centronics interface (optional serial)
HP Laserjet series 11 compatible
6 Resident Fonts & 23 symbol sets
21 Font Cartridges available (& soft fonts)
Ricoh 6000 Laser Engine (Very reliable)
6 Pages per minute
300 x 300 dots per inch.
Portrait & Landscape delivery
150 sheet feed tray (See Free Offer)
Measures only 16" x 16.5" x 8" (17kgs)
On-Site warranty included (extendable)



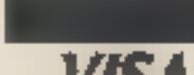
£649.95

inc. VAT & Carriage

FREE 400 Sheet paper tray, value £200



VISA/ACCESS orders welcome. Prices subject to change without notice. All transactions are subject to our standard conditions of Sale, available upon request. Personal callers welcome by appointment. All prices include VAT. All goods Brand New unless expressly stated otherwise



UK HOME COMPUTERS

Unit 22, BSS House
Cheney Manor Ind. Est.
Swindon, Wilts. SN2 2PJ
Tel: (0793) 695034

SO WHO NEEDS WINDOWS 3?

After coming to prominence in the home computing world by creating the two-million-selling GeoDesk for the Commodore 64, American company GeoWorks has, for the last three years, been turning its attentions to the PC market.

The result of this switch in markets is Ensemble, an award-winning suite of programs which aims to provide your PC with a WIMP-based front-end. And what a front-end it is! The visual effect is best described as 'soft 3D'; subtle shading defines a combination of sliders, buttons and switches which borrow heavily from Steve Jobs' NeXT machine interface in both appearance and functionality.

Ease of use is the name of the game here, and what is really remarkable about Ensemble is that it will run on any PC with a minimum of just 512K of memory. This, coupled with an open-ended design allowing for the addition of further modules to complement its built-in applications, and excellent print quality, makes the package tremendous value for money.

Essentially, it contains everything the home user or small business with standard AT or XT-type machines needs to manage and present their work.

SETTING UP

Although Ensemble is shipped with 500-plus pages of documentation, it's immediately apparent that, by and large, the manual is not really required. Installation is a simple question of typing 'setup' at the DOS prompt; everything else is taken care of automatically – assuming, of course, that you have the various system requirements on hand: an XT, AT, 386, 486 or PS/2 PC compatible, at least 512K of memory, 3Mbytes of hard disk space, a mouse, DOS 2.0 or higher and an EGA, VGA, MCGA or Hercules card driving your monitor.

Since Ensemble is primarily designed to be a front-end it's perhaps a good idea to modify your autoexec.bat file to autoload Ensemble on booting. This

will be no problem if you then want to run a DOS program; on loading, you are presented with three buttons, one of which allows you to directly launch DOS batch files. The other two buttons, labelled Appliances and Professional, let you dispense with the dreary old command line interface forever.

BASIC ESSENTIALS

The manual somewhat simplistically refers to the bundled Appliances as the equivalent of a toaster; small, simple and basic. Although the Planner, GeoDex, Banner, Calculator, Notepad and Solitaire modules accessible from the Appliances section also appear in the Professional workspace, in Appliances mode they don't include additional buttons, scroll bars and pull-down menus. We're talking idiot-proof mini-applications here.

The two Appliances most worthy of note are Geodex, an Address book, and Banner, a large-scale print application; although basic, both show the tremendous ease and flexibility of the system.

GeoDex is more like a Macintosh HyperCard stack than a conventional PC program, with small buttons enabling you to quickly create and locate names and addresses and automatically dial corresponding phone numbers (if you have a modem hooked up).

Banner is a simple-to-use printing utility which will output text sideways onto continuous paper in a size of one character per page. Although programs like this have been around for a while now, this one is about the best available – various modifications to the text such as emboldening, italicising and shadowing can all be

brought in from a pull-down font menu. And if you assume that the eventual print quality of these embellishments might leave a lot to be desired, you couldn't be more wrong: the output is fantastic, even on a 9-pin dot matrix printer.

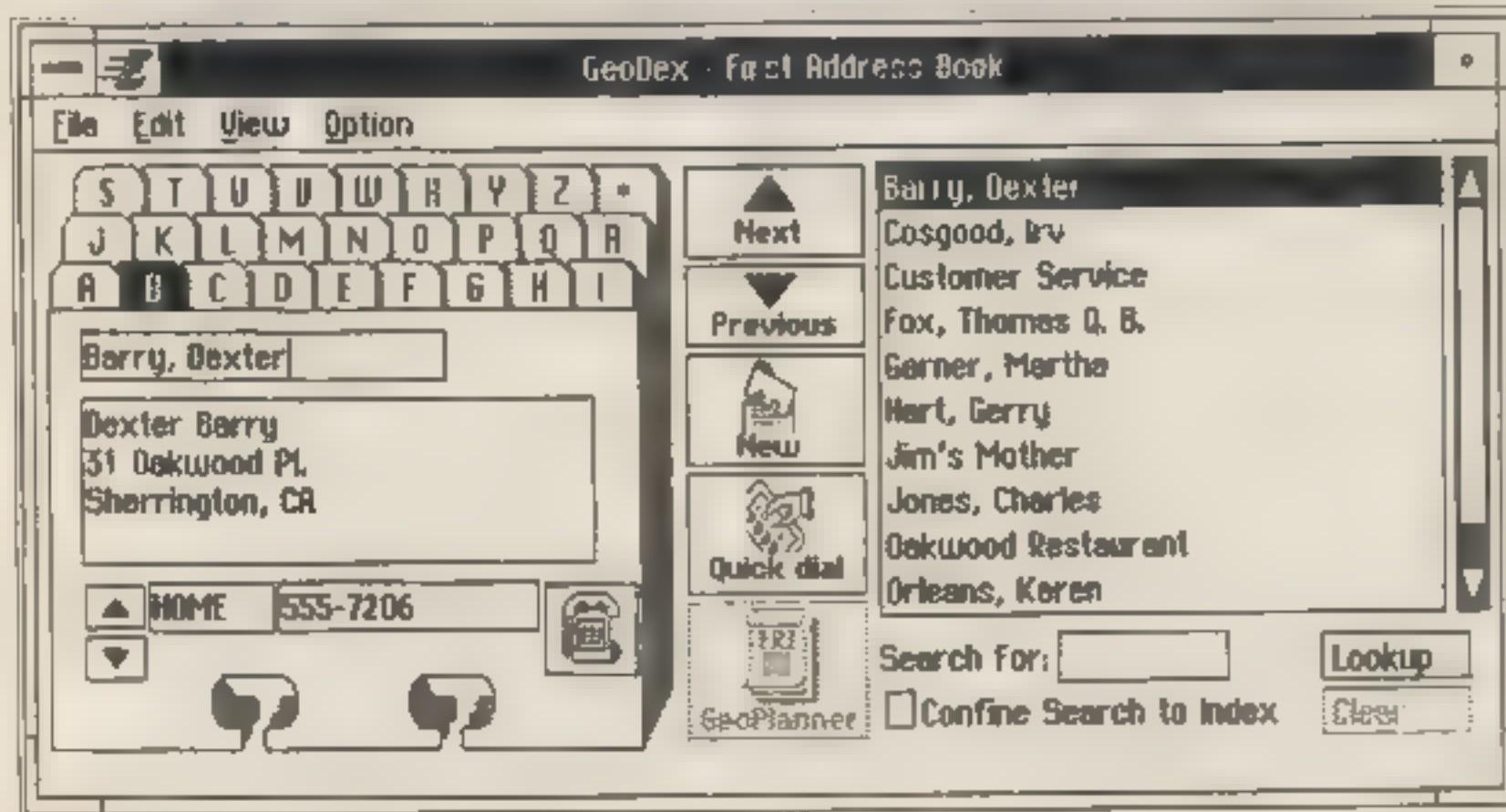
This is because Ensemble uses outline fonts to define the shape of characters both on screen and in print. The result is fast screen updates and extremely precise printed output.

PROFESSIONAL WORKSPACE

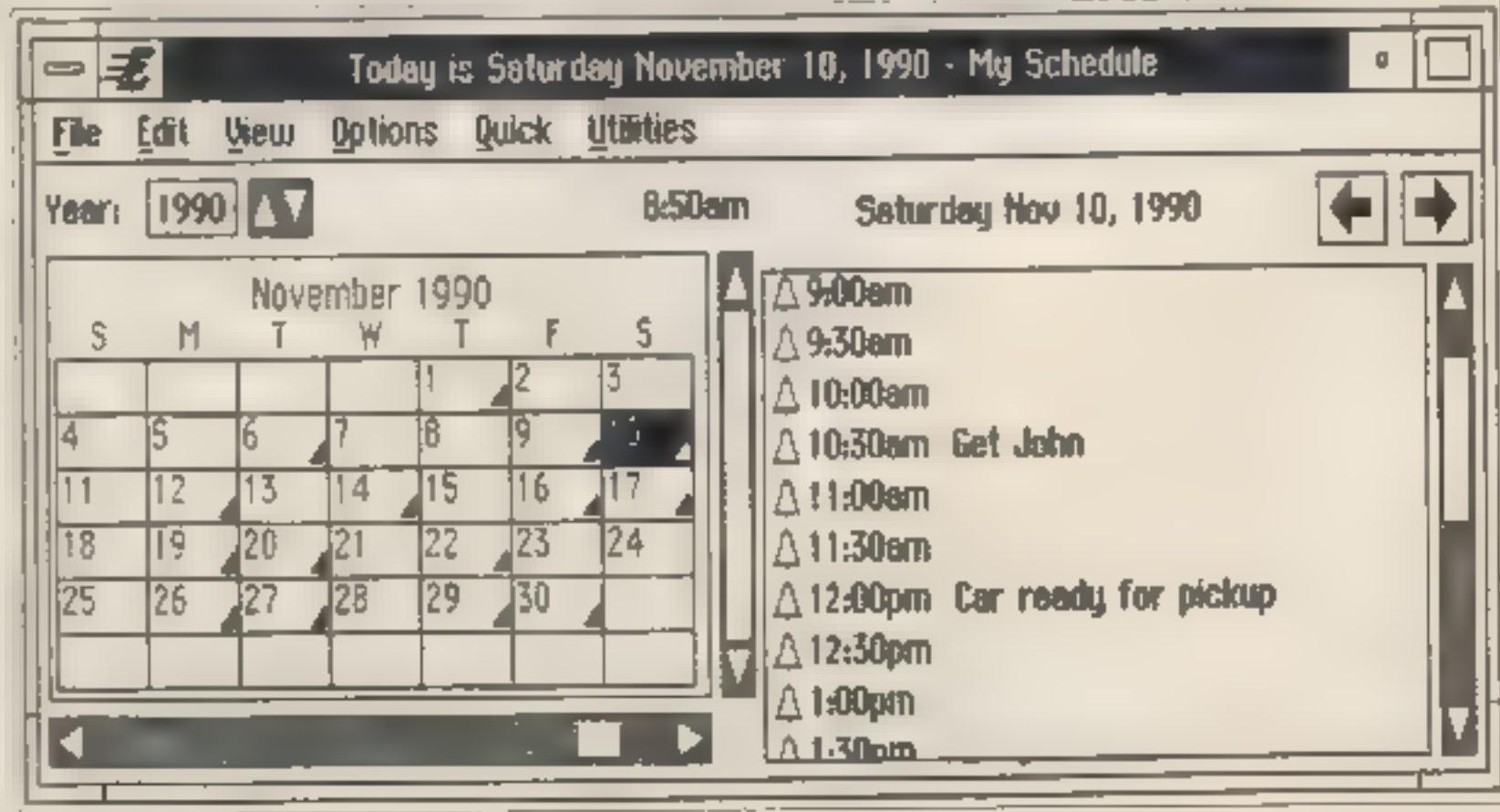
Although the Appliances are impressive, the heart of Ensemble lies behind the Professional Workspace button. This reveals the GeoManager icon desktop, with its 10 sub-applications. Any of these can be launched by double-clicking on their icons, and can be made to multitask with each other in their own separate windows – which can be resized using scroll bars or moved around by holding down the mouse button while in the title bar area.

Clicking on the icons representing different drives in the information area produces iconic or textual representations of all the folders and files on your entire machine.

Ensemble follows a Mac-style interface, in that any document relating to a program residing elsewhere on disk can be launched directly by simply double-clicking on it – saving you the trouble of finding the program itself and launching that, then opening the relevant document. Moreover, an 'overlapping' icon allows you to view several window directories simultaneously within the larger GeoManager window.



• Geodex is much better than the Address Book Appliance – it gives you lots of extra features. You can print all the names and addresses in the file on your printer.



• GeoPlanner is a combination of desk calendar and appointment book. It's a good place to write things you don't want to forget.



• **GeoDraw in action - it can import scanned images too**

The upper area of the screen contains buttons to open, close and expand windows to full screen size and to call up the Express Menu - an essential shortcut which lets you switch from one application to another, start a new application, return to the Welcome screen or return to DOS. Also up top are the pull-down menus - File, Tree, View, Options, Disk and Window.

These file management and viewing functions are probably the areas where Ensemble is most likely to be compared to Windows 3 - and there's no escaping the fact that there are remarkable similarities. The difference lies in the added value supplied by Ensemble's bundled Appliances and the consistent menu iteming they share.

These consistent menus are present throughout all the sub-applications included in Ensemble, although individual items within menu ladders will alter depending on the parent program. It is certainly the case that consistent key combinations and positioning of items makes the interface begin to seem to be pretty intuitive after a few hours' use.

As any Mac user will tell you, the fact that all Mac programs have a consistent orthodoxy in the way they behave and are presented makes that machine one of the most enjoyable to work on. With Ensemble, Geoworks has set out to do just the same.

THE PROGRAM SUITE

The main programs available in Ensemble are the *GeoWrite* word processor and *GeoDraw* paint package, together with *GeoComm*, a fully-functioning telecommunications package with auto-dialling and sequencing scripts. But smaller applications are also present; functional utilities existing as memory resident programs or desktop accessories which can be called up at any time.

The calculator, notepad, scrapbook and planner can all be used to store diverse information which can then be transferred into the other applications. Thus, for instance, it's possible to quickly paste name and address information from *GeoDex* into *GeoWrite*, or exchange pictures between *GeoDraw* and *GeoWrite* via the scrapbook.

Another useful utility is called Preferences, which offers the user options to alter screen, mouse and printer device options. A spreadsheet and database are in the pipeline and should be available later this year.

Aside from the well-designed front-end and the useful memory-resident utilities, each of which in themselves make Ensemble worth having, are the main packages on offer; *GeoWrite* and *GeoDraw*.

First of all, it's important to say that the two applications are extremely similar in terms of menu design and one can easily cut and paste material between the two. While *GeoWrite* is primarily intended to offer text editing facilities, it also supports many design and layout functions within the package. Similarly *GeoDraw*, while primarily intended to offer design and layout features, also offers text editing functions.

With 20 fonts and several different typefaces, *GeoWrite* is obviously more than a standard text editor. Instead it's more of a word processor along the lines of, say, Microsoft Word for the Mac, where all a user has to do is highlight text with the mouse before selecting the size, font and type style required; the results are immediately displayed on-screen. The screen can also be expanded or contracted in size to suit your own viewing needs.

Besides this, though, the module also offers a number of features normally only found in DTP packages. Facilities, for example, to produce white-on-black reversed-out type, custom design borders surrounding text, background, border and text halftones and multi-column formatting are all present in the package.

Perhaps the most innovative feature of *GeoWrite* is its colour support, however; text and border areas can be set to one of 16 preset colours or one of 255 individual RGB settings. Finally, graphic elements can be imported from *GeoDraw*.

The *GeoDraw* module is also a very advanced piece of software, with object-oriented graphic elements allowing accurate changes of size and proportion with no loss in resolution or definition. Graduated fills and halftones can be added to discrete objects, whether they be polygons, lines or text characters.

Again, the full palette of colours is available (although the actual range of colours depends on your graphics card). Text manipulation is also straightforward and extremely fast, given the system's employment of outline fonts. As such, text can be rotated and flipped very quickly.

Used in combination, *GeoWrite* and *GeoDraw* provide immense possibilities; even the humblest XT with 512K of memory is capable of handling graphics and text as if it were a 386 with several Megs of RAM.

WORTHY OF INVESTIGATION?

So, is Ensemble worth a look? As far as I'm concerned, the answer is a resounding yes. Geoworks has spent three years working on the package and, after looking hard at the Macintosh, Windows, NeXT and OS/2 interfaces, the company thinks it has come up with something rather special. To intents and purposes it has - Windows 3 notwithstanding.

Perhaps Ensemble's only flaw is its bad timing; had the product made it to the market a year earlier, then perhaps we would now see it as the central player in the new generation of PC user-friendliness. As it is, the ground has been stolen, Microsoft is firmly entrenched and, despite the package's credible advantages, one can't help but feel that in the long run, it's doomed.

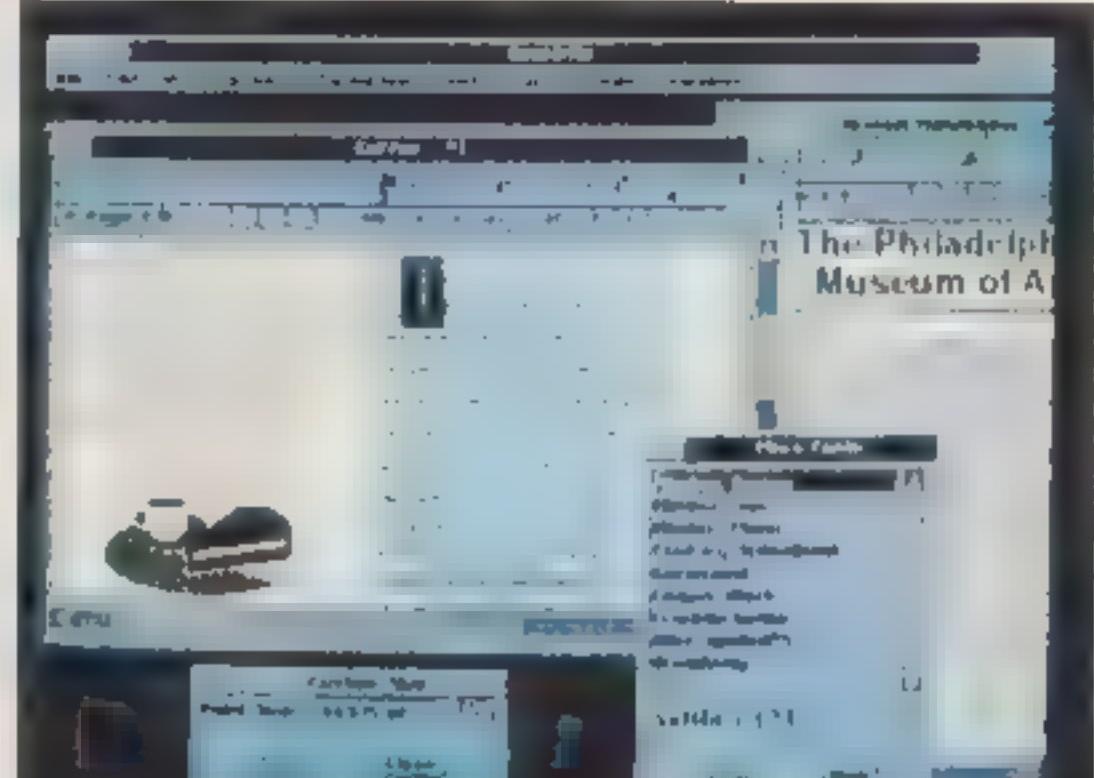
But then, 80 per cent of the PC market consists of 386 and 286 machines with 640K of memory and nothing more. Flashy 386 boxes with extended memory are in the minority, so Geoworks is, rightly, aiming its product at the majority of PC users.

With Ensemble, you don't need Windows and you certainly don't need to upgrade just so you can draw on the benefits of using a graphical interface. If you want all that a WIMP interface can offer and more besides, take a long, hard look at Ensemble; you may well find that it fits the bill. ■

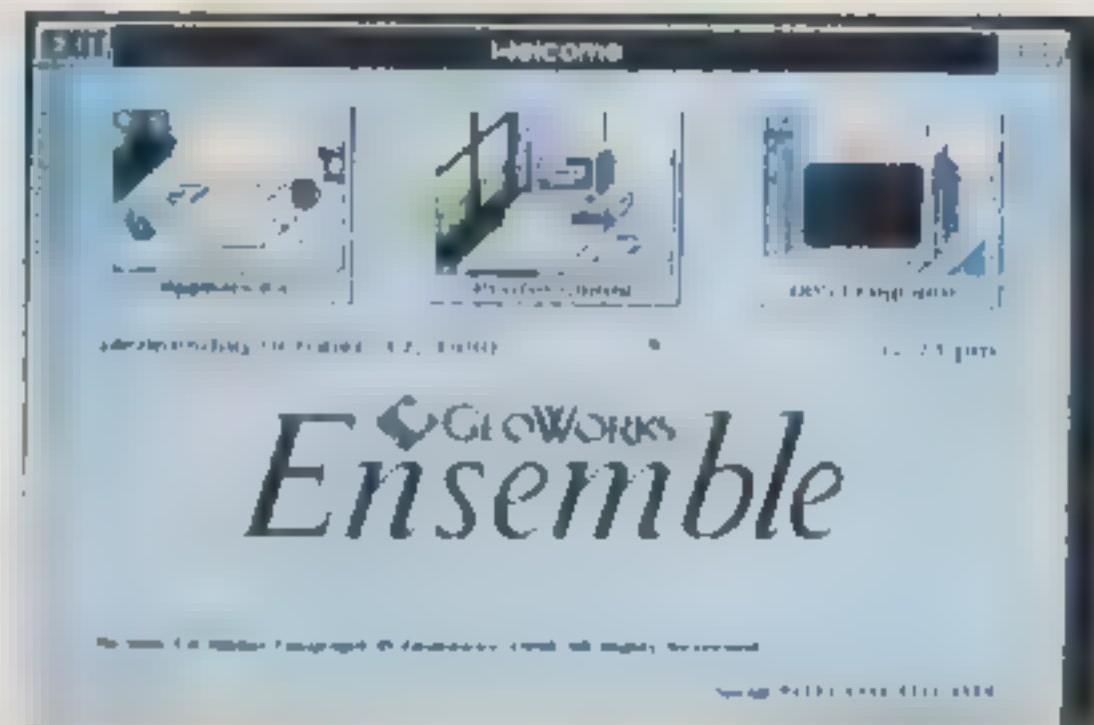
Geoworks' Ensemble is available for £149 from GSI Republishing on 081-995 4500.



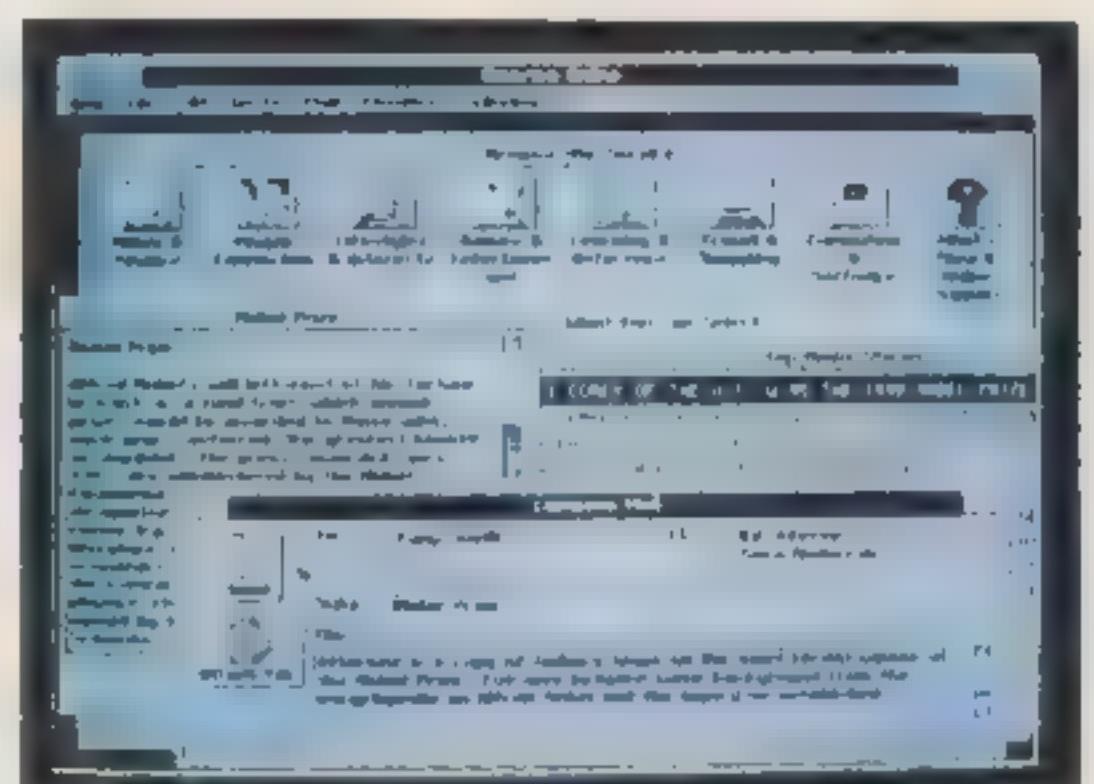
• **GeoManager's icon driven front-end makes for easy file management.**



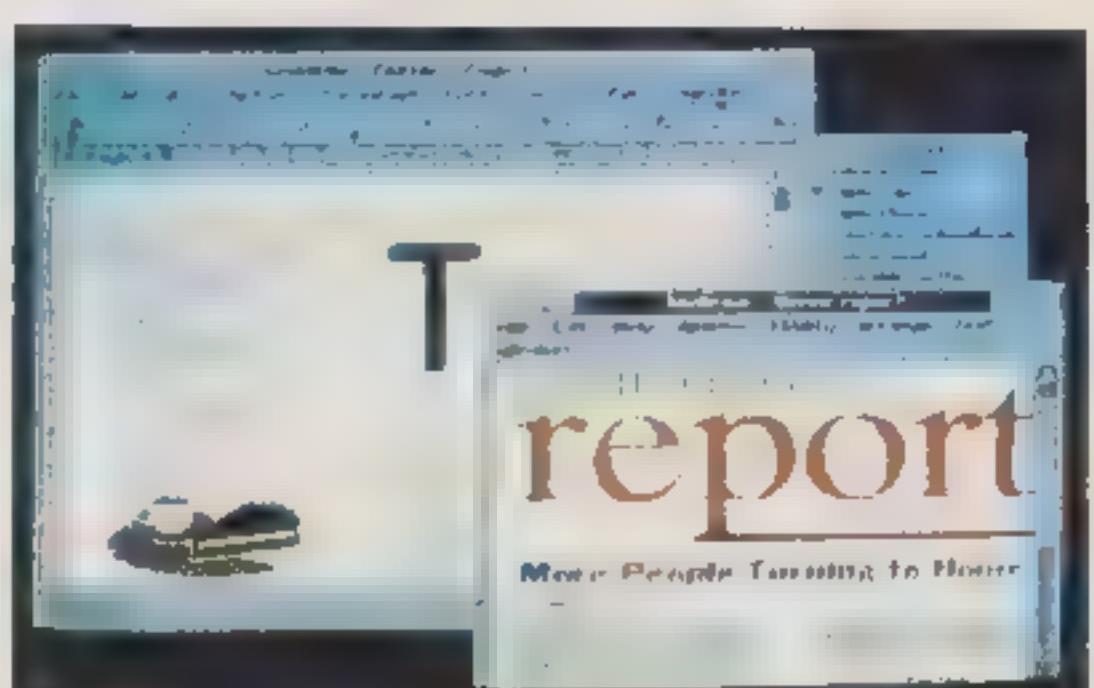
• **The GeoWrite word processor also supports pictures and DTP elements.**



• **Ensemble's Welcome screen.**



• **The built-in comms package also supports multi-windowing.**



• **With outline fonts it's possible to quickly resize text.**

COMPETITION

WIN! WIN! WIN! WIN! WIN!

ARE YOU A £50,000 WINNER?

Not if you entered a compo in *Express*, but in the last six months or so we've never given away a prize worth less than £400 and we even gave a £2,000 laser printer to some lucky soul. To see if you've joined in the £20,000 *Express* giveaway read on:

Some one had to win, didn't they? We've cranked up the steam tombola and drawn winners for some of *Express'* recent competitions. There were so many entries that the tombola cracked in the middle when we turned the handle too fast. There are loads more to draw yet and we'll be listing those within the next few weeks.

All of the prizes in the competitions we run come direct from the distribution companies themselves. If you haven't received your prize within a month of the cover date of this issue, yell at them, not us.

So who wanted a QL? Loads and loads of you. But the exceptionally lucky winner is Rick Mittord and he gets a QL, monitor and printer from EEC Ltd on 0753 888866.

There were 40 Dial Code Breakers to win from Sector Software (0772 452414). We've drawn the first 20 (the other 20 will be announced in a few weeks) and they are: Brian Ross, R Beaconwell, S Stinson, P Wallace, E R Burns, Paul Boocock, Jim Comrie, R Fincham, Ally Hill, R P Sharman, Edward McLaughlan, A Hylton, Steve Pepper, Eugene Morgan, J Wilson, Colin Mackay, N Prescott, KW Birks, Roger Philips, RF Gay.

Next came a couple of copies of the delightful Amiga DTP package, *Pagestream 2*. These are available from Silica Shop on 081-309 1111 and will be winging their way to the Amigas of M

Jones and AH Foster.

Show me the way to go home, we said and with ten copies of *Autoroute* from NextBase on 0784 460582, here are ten *Express* readers who can do just that:

Robert Gill, Bryn Stevenson, Peter Kemplay, Campeann, David North, NA Crooks, EA Cook, Neil Wakeford, Garth Barnes, Terrence Simpson.

Last, but not least the Down Earth with a Bang Compo offered copies of *Air Traffic Control Simulator Tower FRA* to 10 of you: Michael Barton, Maynard Wilson, Graham Dobson, Stephen Wakefield, TS Whaite, Steve Carter, Nick Taylor, Allan Ogilvie, Timson, Peter Gunning, MJ Humphrey, D Winder, Dave Brown, MJ Bull, Andrew More, Mrs S Matheson, Simon Taylor, Trevor Cobbe, W Stones-Clare, Phillip Capstick.

So if you didn't win, keep on trying. We're giving away thousands of pounds worth of prizes starting with the Commodore *Express* £5,000 giveaway!

Commodore and *Express* have joined together to offer over £5,000 in First Steps Software over the next few weeks. If you have an Amiga and you want the definitive education package for youngsters, start buying stamps NOW...

MAKE SURE YOU GET A COPY OF NEXT WEEK'S EXPRESS

Complete this form and hand it to your newsagent

TO THE NEWSAGENT: Please reserve me copy/copies of *New Computer Express* every week, beginning with issue 126, out on 4th April.

NAME

ADDRESS.....

TELEPHONE NUMBER

To the newsagent: *New Computer Express* is published by Future Publishing and is available from your local wholesaler. Send back all your Future shop save coupons for entry in a free draw to: Kate Hodges, Future Publishing, 30 Monmouth Street, Bath BA1 2BW.



EDITOR • Andy Storey
NEWS EDITOR • Colin Campbell
TECHNICAL EDITOR • Keith Pomfret
PRODUCTION EDITOR • Julie Tolley
ART EDITOR • Amanda Cook
SUPPLEMENTS EDITOR • Tim Smith
STAFF WRITER • Dave Golder

CONTRIBUTORS

• Steve Gold • Jason Holborn
• Steve Jarrett • Ian Wrigley
• Andy Hutchinson • Robin Alway
• Frank O'Connor • Hadyn Fitz-Williams
• Rod Lawton • Neil Jackson
• Mary Branscombe • Ken Colmar

CIRCULATION DIRECTOR • Sue Hartley

AD MANAGER • Helen Kirkhope

SENIOR AD EXECUTIVE • Cheryl Beesley

AD EXECUTIVES • Tim Partridge

• Siobhan Kennedy-Coyne

AD PRODUCTION • Frances Wasem

AD TYPESETTING • Terry Mackrell

PUBLISHER • Graeme Kidd

ABC audited circulation July-December

1990: 20,204 copies per week

We regret we cannot enter into any personal correspondence. Technical enquiries should be addressed to Tech Tips at the address below. While every care is taken in the preparation of *New Computer Express*, Future Publishing cannot be held responsible for the consequences of any errors that may occur.

• Subscriptions: The Old Barn, Somerton, Somerset (0458) 74011
• Printed by Redwood Press, Melksham, Wilts
• Distributed in UK and Eire by MMC Ltd (0483 211222); rest of world by Comag (0895 444055)

© Future Publishing Ltd
30 Monmouth Street, Bath BA1 2BW

CONTACTS

Tel: 0225 442244

Fax: 0225 482018

E-mail: CIX@astor.ec

GOLD@84:TXT152

PRESTEL@011112623

'Your guarantee of value'

This magazine is published by Future Publishing, a company founded just two years ago, but which now sells more computer magazines than any other publisher in Britain. We offer:

Better advice. Our titles are packed with tips, suggestions and explanatory features, written by the best in the business.

Stronger reviews. We have a strict policy of editorial independence, so our reviews give clear, balanced recommendations.

Clearer design. You need some information fast. So our designers highlight key elements by using charts, diagrams, summaries, tables and photographs.

More reader interaction. We rely strongly on readers' contributions, resulting in the liveliest letters pages and the best reader tips. Buying one of our magazines is like joining a nationwide user group.

Better value for money. More pages, better quality, magazines you can trust.

Future
PUBLISHING

magazines

Amstrad Action • 8000 Plus • PC Plus
Amiga Format • ST Format
New Computer Express • Your Sinclair
Commodore Format • Sega Power
Amiga Power • Amiga Shopper
Mac Publishing

COMING NEXT THURSDAY

Purchasing a portable?

Express casts an informed eye over what to look out for - and what to ignore

Door to Door

Yes it's that program!
Is it really as bad as everyone says?

GT ST

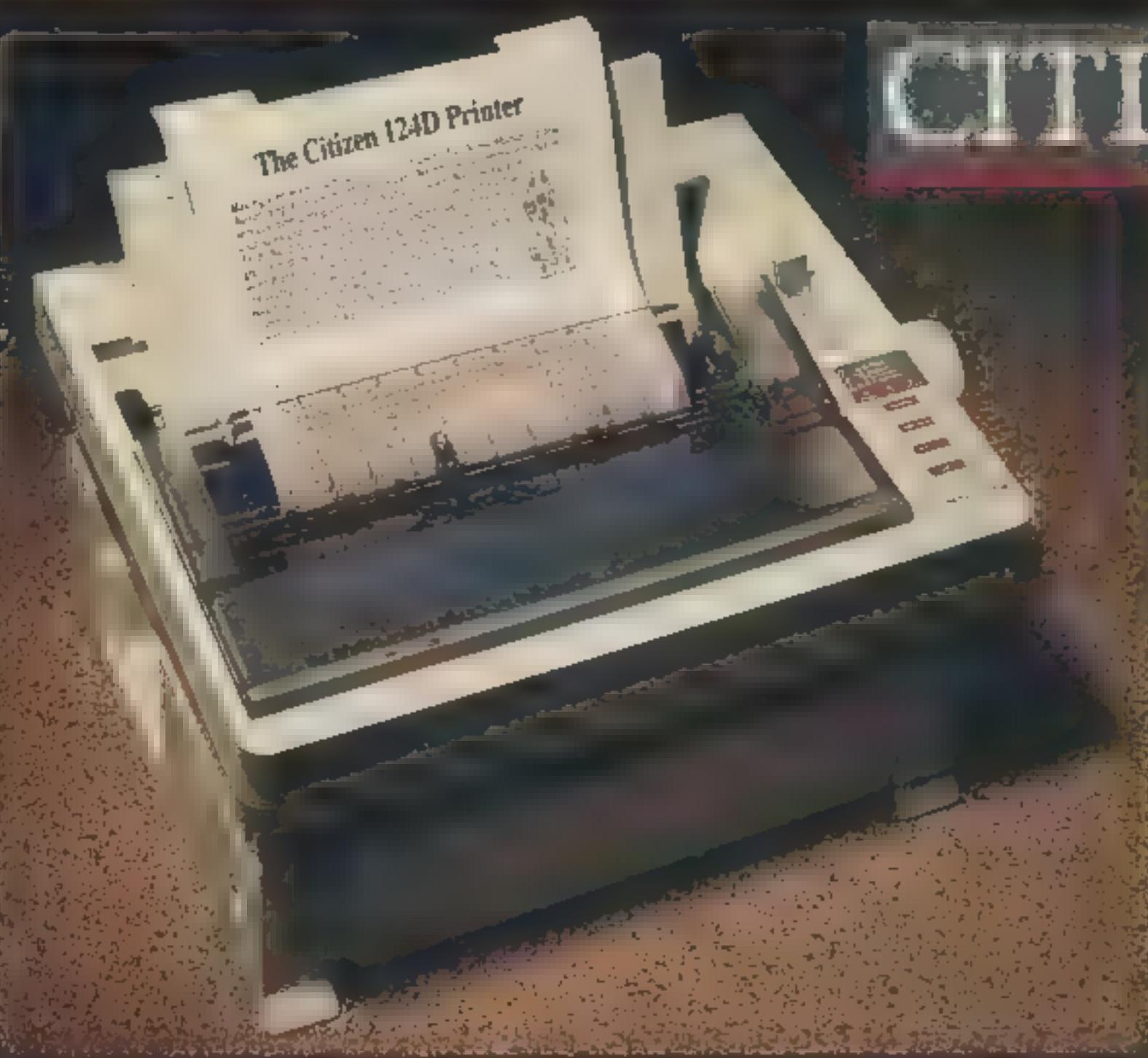
Adimens' GT relational database for the ST - better than SuperBase?

Goldstar's PC

Express's office PC taken to pieces

AND

News of a cracking Commodore compo!!!

**CITIZEN****PRINTERS****FREE DELIVERY**

Next Day - Anywhere in the UK mainland

FREE STARTER KIT

Worth £29.95 - With every Citizen printer from Silica.

FREE COLOUR KIT

Worth £39.95 - With Swift 9 and Swift 24 printers.

2 YEAR WARRANTY

Silica offer a 2 year warranty (including the printer head) with every Citizen printer purchased from Silica.

WINDOWS 3.0

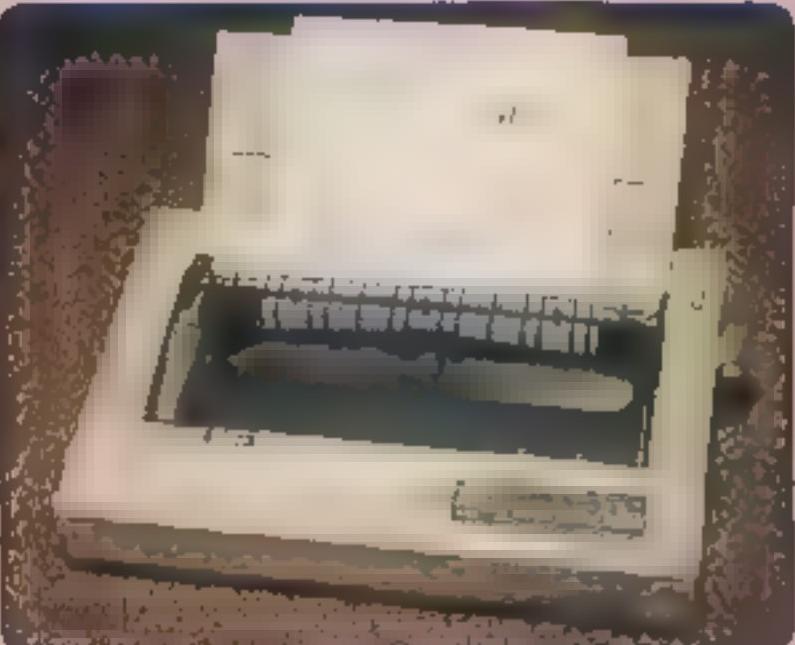
Free Windows 3.0 driver - In the Silica Starter Kit.

FREE HELPLINE

Technical support helpline open during office hours.

MADE IN THE UK

Citizen printers are manufactured to high standards.

144 CPS DRAFT 9 PIN**CITIZEN 120D+**

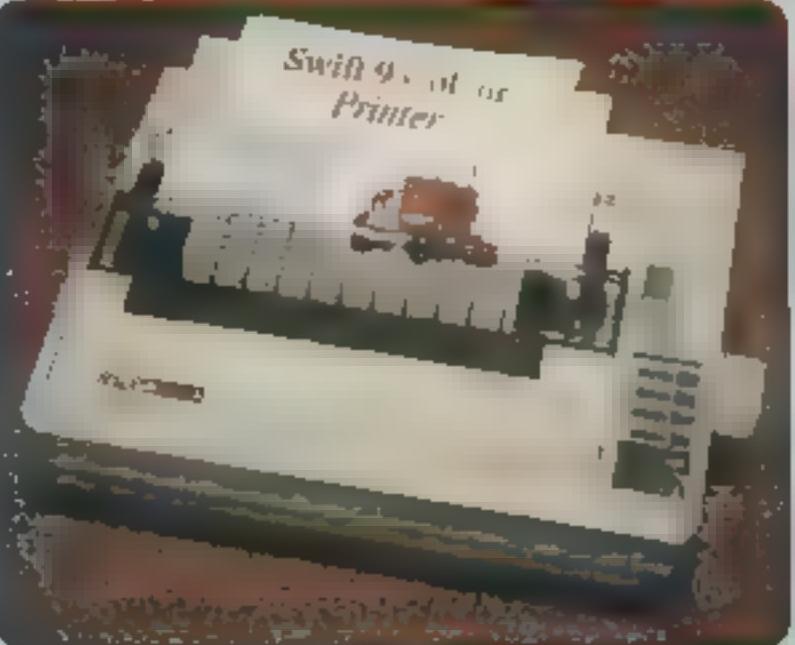
The Citizen 120D+ is one of the UK's best selling printers. It has a stylish appearance and excellent features and performance for such an inexpensive printer. The 120D+ is available with either a serial or parallel interface and is an ideal first printer.

- 9-pin Printhead
- Print Speed 144cps Draft
- 30cps NLO
- Epson & IBM Graphics Emulation
- Pull Tractor & Bottom Feed
- Superior Graphics - 240x216dpi
- FREE Starter Kit

RRP £226.85
STARTER KIT £29.95
TOTAL RRP: £256.80
SAVING: £110.45
SILICA PRICE: £148.35**£129****144 CPS DRAFT 24 PIN****CITIZEN 124D**

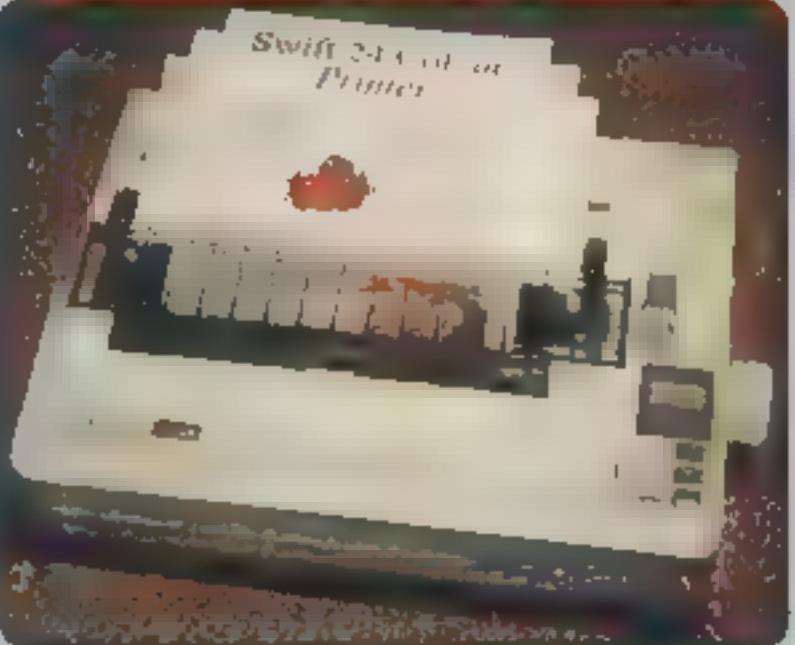
The award winning Citizen 124D brings high quality 24-pin dot matrix printing within every computer users reach. It is the ideal choice where high quality printing is required at a budget price.

- 24-pin Impact Printer
- Print Speed 144cps Draft
- 2 LQ Fonts (48cps)
- 8K Buffer
- Epson, IBM & NEC P6+ Emulation
- Advanced Paper Parking
- Superior Graphics - 360x360dpi
- FREE Starter Kit

RRP £320.85
STARTER KIT £29.95
TOTAL RRP: £350.80
SAVING: £144.95
SILICA PRICE: £205.85**£179****192 CPS DRAFT 9 PIN****SWIFT 9 - COLOUR!**

The Citizen Swift 9 is perfect for those who require high quality dot matrix black or colour printing at a budget price. The print quality of Swift 9 rivals that of other manufacturer's 24-pin models.

- 9-pin Impact Printer
- Print Speed 192cps Draft
- 3 NLQ Fonts (48cps)
- 8K Buffer
- Epson & IBM Graphics Emulation
- Advanced Paper Parking
- FREE Starter Kit
- FREE Colour Kit

RRP £309.85
STARTER KIT £29.95
COLOUR KIT £39.95
TOTAL RRP: £379.25
SAVING: £161.90
SILICA PRICE: £217.35**£189****192 CPS DRAFT 24 PIN****SWIFT 24 - COLOUR!**

The Citizen Swift 24 is one of Europe's best selling printers and has won awards including Printer Of The Year 1990. Its rapid print speed, quality and black or colour options, make it a natural choice.

- 24-pin Impact Printer
- Print Speed 192cps Draft
- 4 NLQ Fonts (64cps)
- 8K Buffer
- Epson, IBM & NEC P6+ Emulation
- Advanced Paper Parking
- FREE Starter Kit
- FREE Colour Kit

RRP £419.75
STARTER KIT £29.95
COLOUR KIT £39.95
TOTAL RRP: £489.65
SAVING: £191.80
SILICA PRICE: £297.85**£259****PRINTER ACCESSORIES****SHEET FEEDERS**

PRA1200	120D	£74.75
PRA1215	124D/Swift 9/24	£96.60
PRA1228	124D/Swift 24	£46.00

SERIAL INTERFACES

PRA1189	120D+	£62.10
PRA1209	Swift 9/124D	£34.50
PRA1709	Swift 24	£28.75

PRINTER STAND

PRA1242	124D/Swift 9/24	£26.95
---------	-----------------	--------

ORIGINAL RIBBONS

RIB3502	120D/Swift 9 Black	£4.03
RIB3924	124D/Swift 24 Black	£5.18
RIB3936	Swift 9/24 Colour	£17.25

COLOUR KITS

PRA1236	Swift 9/24	£39.95
---------	------------	--------

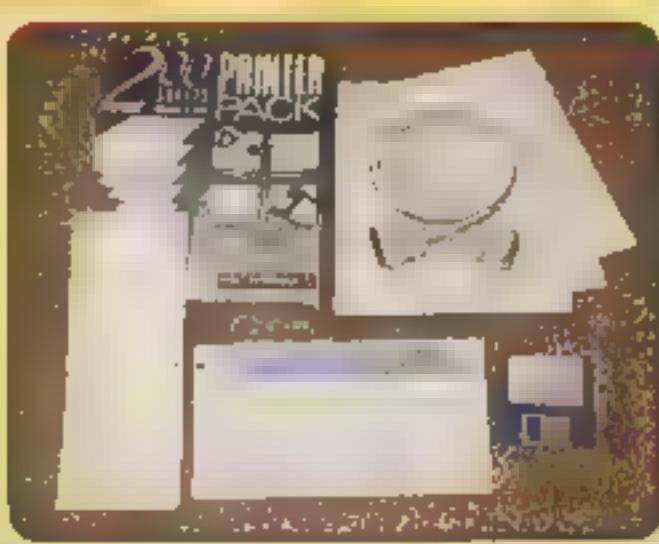
All prices include VAT and Free delivery.

FREE! STARTER KIT

Every Citizen printer from Silica, comes complete with the Silica Printer Starter Kit, including everything you need to get up and running with your new printer immediately, FREE OF CHARGE!

- 3½" Dual Format Disk with Amiga & ST Printer Drivers
- 3½" Disk with Drivers for Microsoft Windows 3
- 2 Metre Parallel Printer Cable
- 200 Sheets of High Quality Continuous Paper
- 200 Continuous Address Labels on Tractor Feed
- 5 Continuous Envelopes on Tractor Feed

If you already own a printer, and would like a Silica Printer Starter Kit, you may order one (ref: KIT 5000) for the special Silica price of £24.95 - off RRP!

NORMAL RRP
£29.95**SILICA SYSTEMS OFFERS YOU**

- **FREE OVERNIGHT COURIER DELIVERY:** On all hardware orders shipped in the UK.
- **TECHNICAL SUPPORT HELPLINE:** Team of PC technical experts at your service.
- **PRICE MATCH:** We normally match competitors on a "Same product - Same price" basis.
- **ESTABLISHED 12 YEARS:** Proven track record in professional computer sales.
- **£13M TURNOVER (with 60 staff):** Solid and reliable with maintained growth.
- **BUSINESS/EDUCATION/GOVERNMENT:** Volume discounts available for large orders.
- **SHOWROOMS:** Demonstration and training facilities at our London & Sidcup branches.
- **THE FULL STOCK RANGE:** All of your PC requirements from one supplier.
- **FREE CATALOGUES:** Will be mailed to you with offers and software/peripheral details.
- **PAYMENT:** By cash, cheque and all major credit cards.

Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or some technical help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is one of the UK's leading independent computer dealers and provides a quality service to users at home, in education and business throughout the nation. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest free literature on the Citizen printer range and begin to experience the "Silica Systems Service".

SILICA SYSTEMS

MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111
Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening
Fax No: 081-308 0608

LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Tel: 071-580 4000
Opening Hours: Mon-Sat 9.30am-8.00pm No Late Night Opening
Fax No: 071-323 4737

LONDON SHOP: Selfridges (1st Floor), Oxford Street, London, W1A 1AB Tel: 071-629 1234
Opening Hours: Mon-Sat 9.30am-6.00pm Late Night: Thursday until 8pm
Extension: 3914

SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-302 8811
Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday until 7pm
Fax No: 081-309 0017

To: Silica Systems, Dept NCE 0491-54, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

Tel (Home):

Tel (Work):

Company Name (if applicable):

Which computer(s), if any, do you own?

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

MiG-29

F U L C R U M



The Soviet Union has produced the finest air superiority fighter in the World.

Now Domark give you the thrill of flying the formidable MiG-29 Fulcrum on your computer.

Prove your skills in a series of gruelling missions based on real life scenarios.

MiG-29 Fulcrum – the ultimate experience in combat aviation.

ONLY THE MiG-29 FULCRUM SIMULATION OFFERS:

- ❑ Full force aero model
- ❑ Ergonomically optimised controls
- ❑ Actual instruments and avionics
- ❑ Accurate modelling of high g-effects on pilot, including simulated black-outs
- ❑ "Expert-driven" combat systems
- ❑ Unique missions featuring real world scenarios



Programmed by Simis Ltd.

Software, Instructions, Artwork and Packaging ©1990 Domark Software Ltd.

MiG-29 photographs courtesy of John Lake/Osprey Publishing ©1990

Published by Domark Software Ltd., Ferry House, 51-57 Lacy Road, London SW15 1PR. Tel: (081)-780 2224.

Available on: Amiga, Atari ST, IBM PC 3.5" & 5.25". Amiga, Atari ST, IBM PC screenshots.

*'The most realistic high 'g' flight simulator for the home computer'
John Farley, Test Pilot
(The first European
to have flown a MiG-29 fighter)*

FREE WITH NEW COMPUTER EXPRESS 126
NOT TO BE SOLD SEPARATELY

YOUR GUIDE TO THE ATARI ST



WANT TO GET YOUR HANDS ON THE ST NOTEPAD COMPUTER?

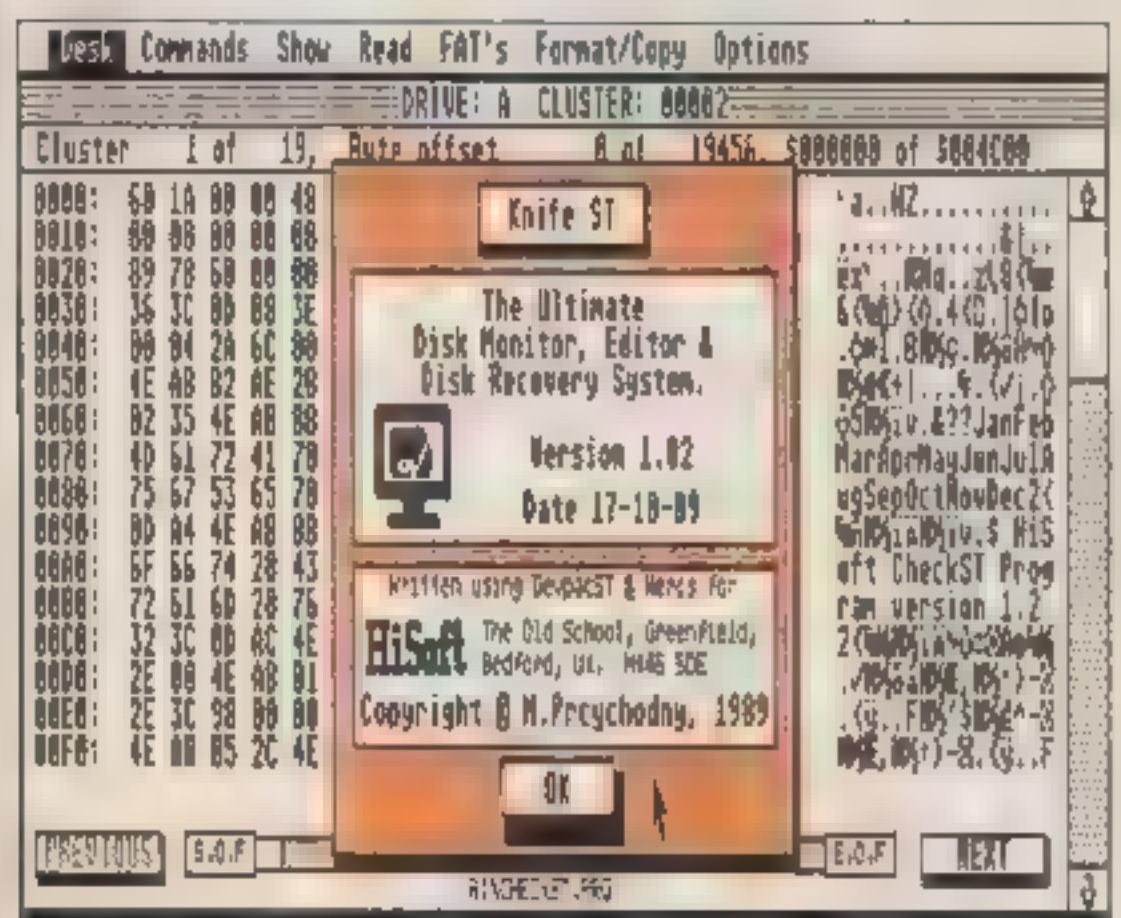
Atari's new keyboardless notebook: we tell you when it is due, and how much it will cost.

WIN!

Atari's latest ST pack! Worth £399!

PLUS

- ST add-ons: the best of the lot
- Buyers' Guide to ST software
- The games you just have to own



BEST SOFTWARE



GREATEST GAMES



ESSENTIAL HARDWARE

AT-A-GLANCE GUIDE TO THE FULL ATARI ST RANGE

The ST is just the

The Atari ST is the perfect introduction to the world of computing. The power of the ST allows you to run "serious" applications as well as playing games, and the ST system is flexible enough to allow you to expand as you develop your interests and expertise in different applications.

One of the real advantages that the Atari ST has to offer is the sheer range and depth of software support. From word processors, spreadsheets and databases through to professional DTP and CAD systems the ST user is spoilt for choice. In MIDI applications the Atari ST has been the choice of professional recording studios and the software support for ST MIDI is awesome.

If you thought that computers were all about playing games you've been missing out on the real potential that you and your computer have. To find out more about either the Atari ST or peripherals for any applications simply fill in the coupon and send it to Atari at the address below.

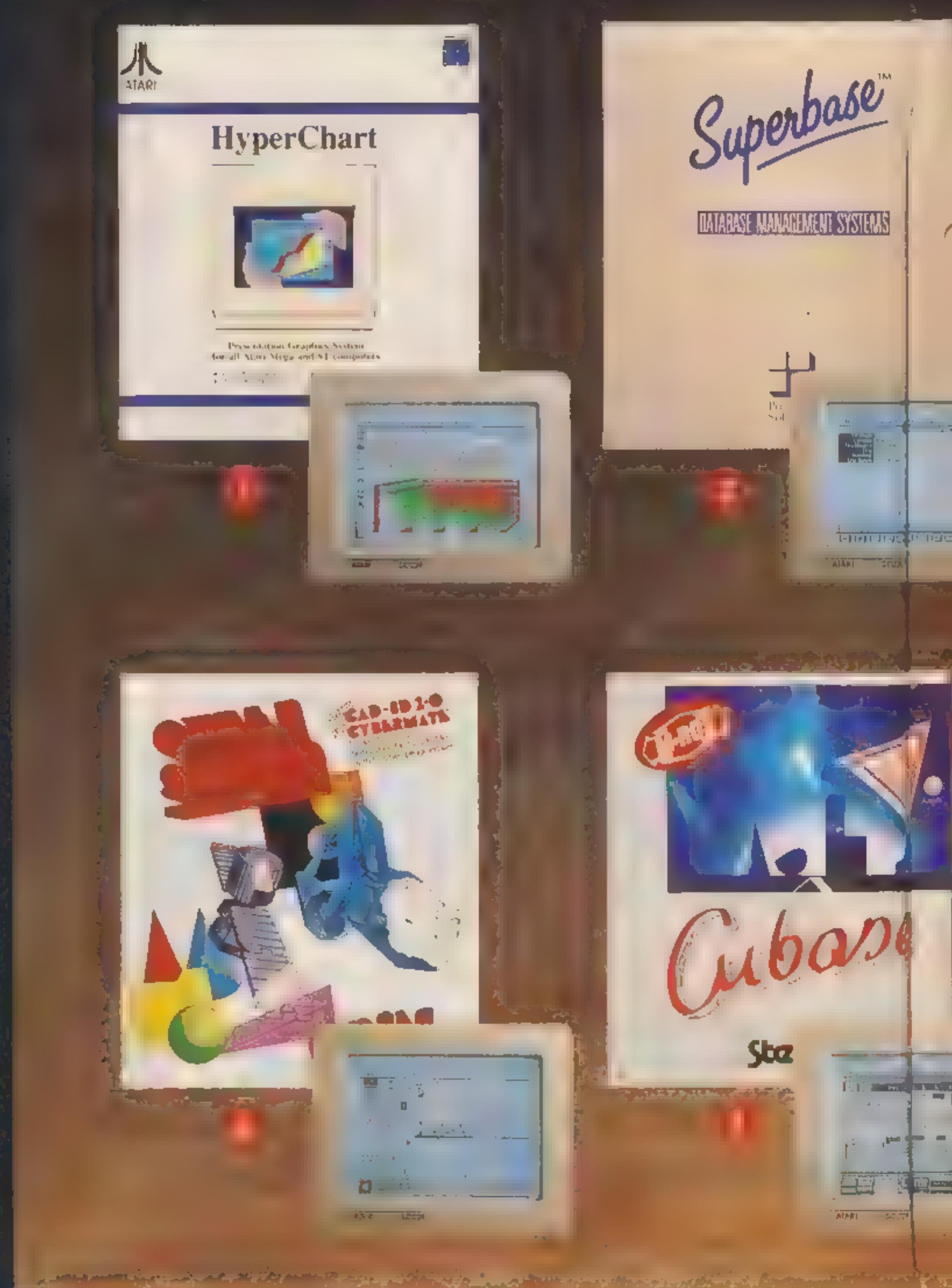


Please send me more details about the Atari ST and other products.

NAME _____

ADDRESS _____

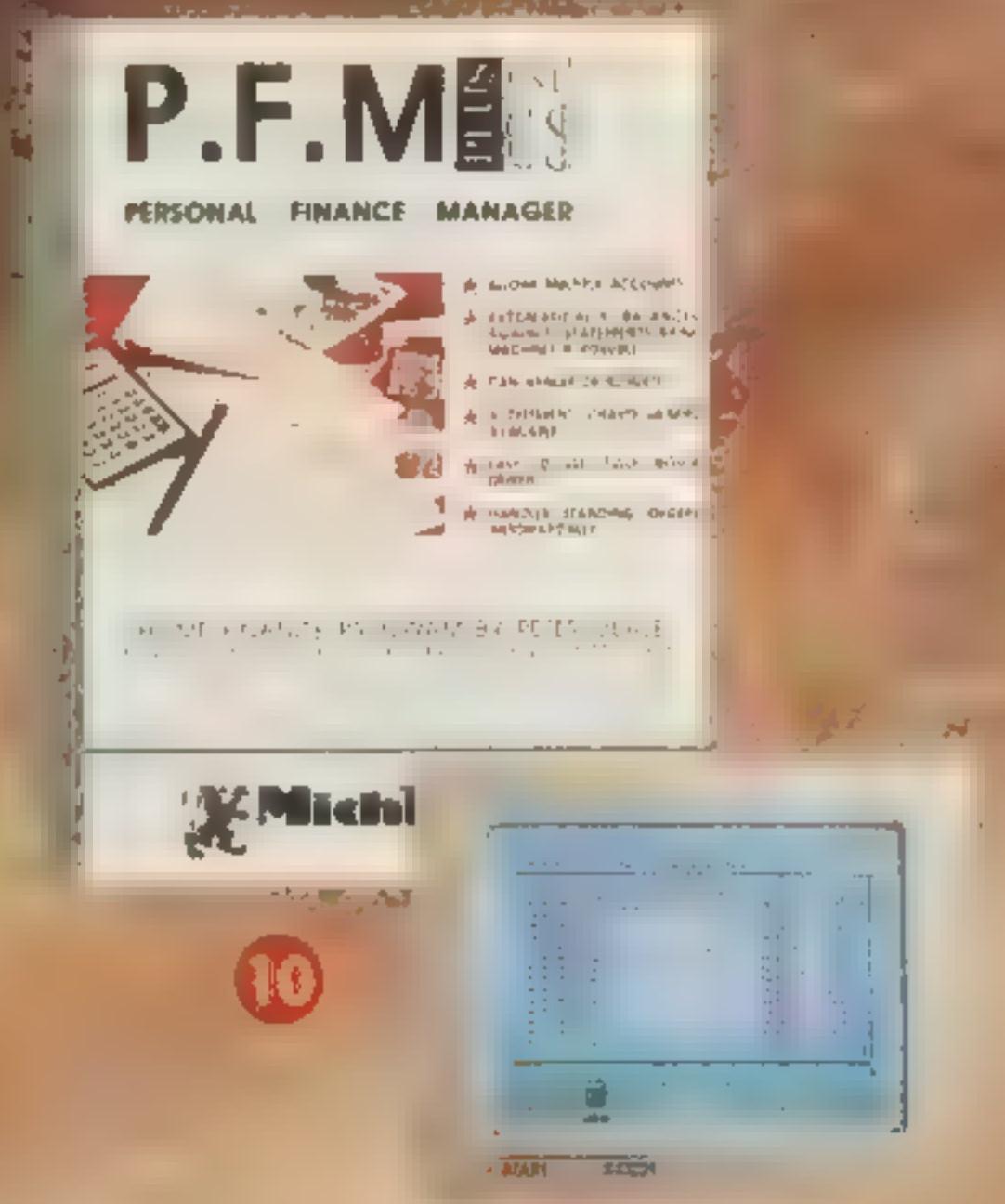
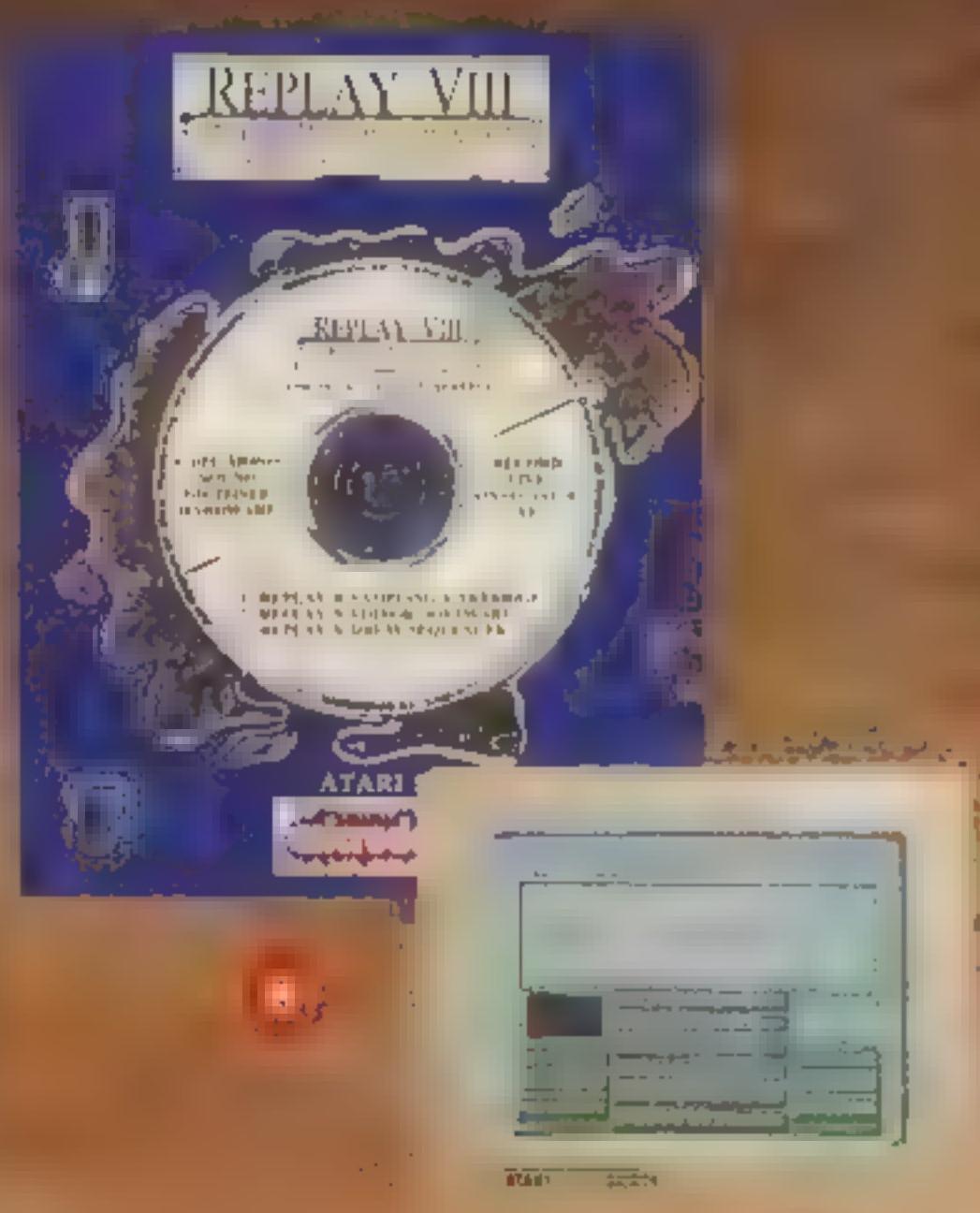
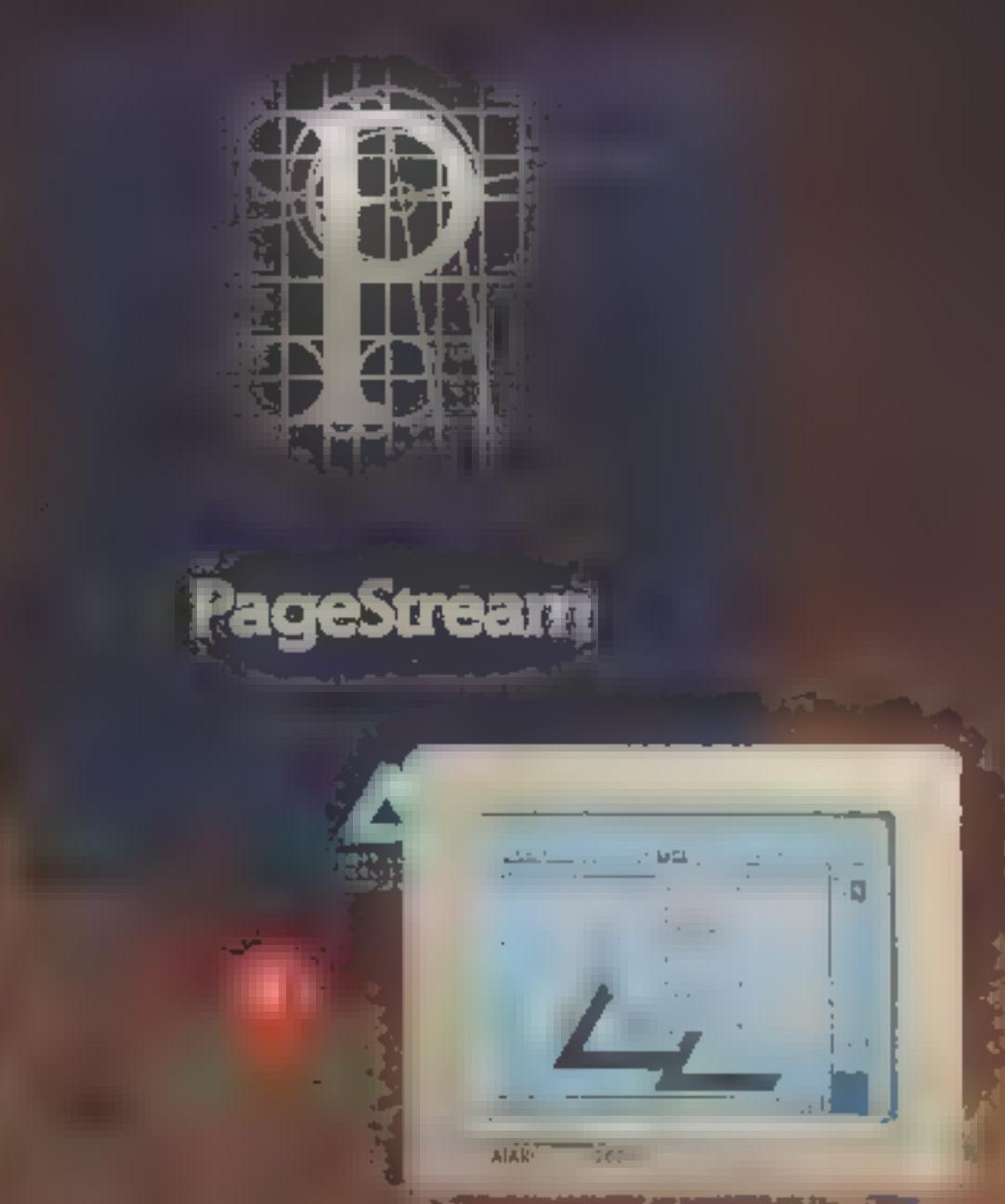
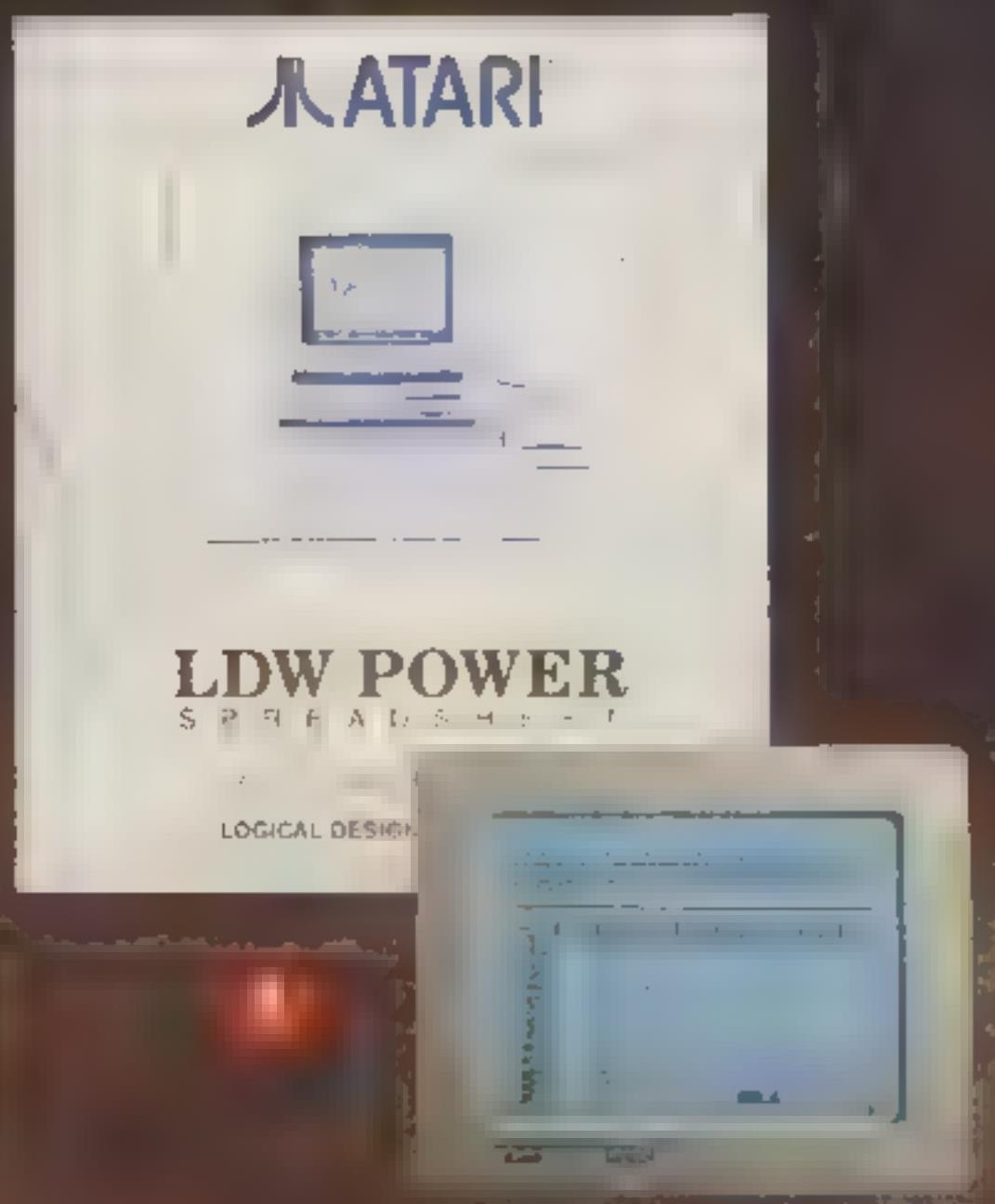
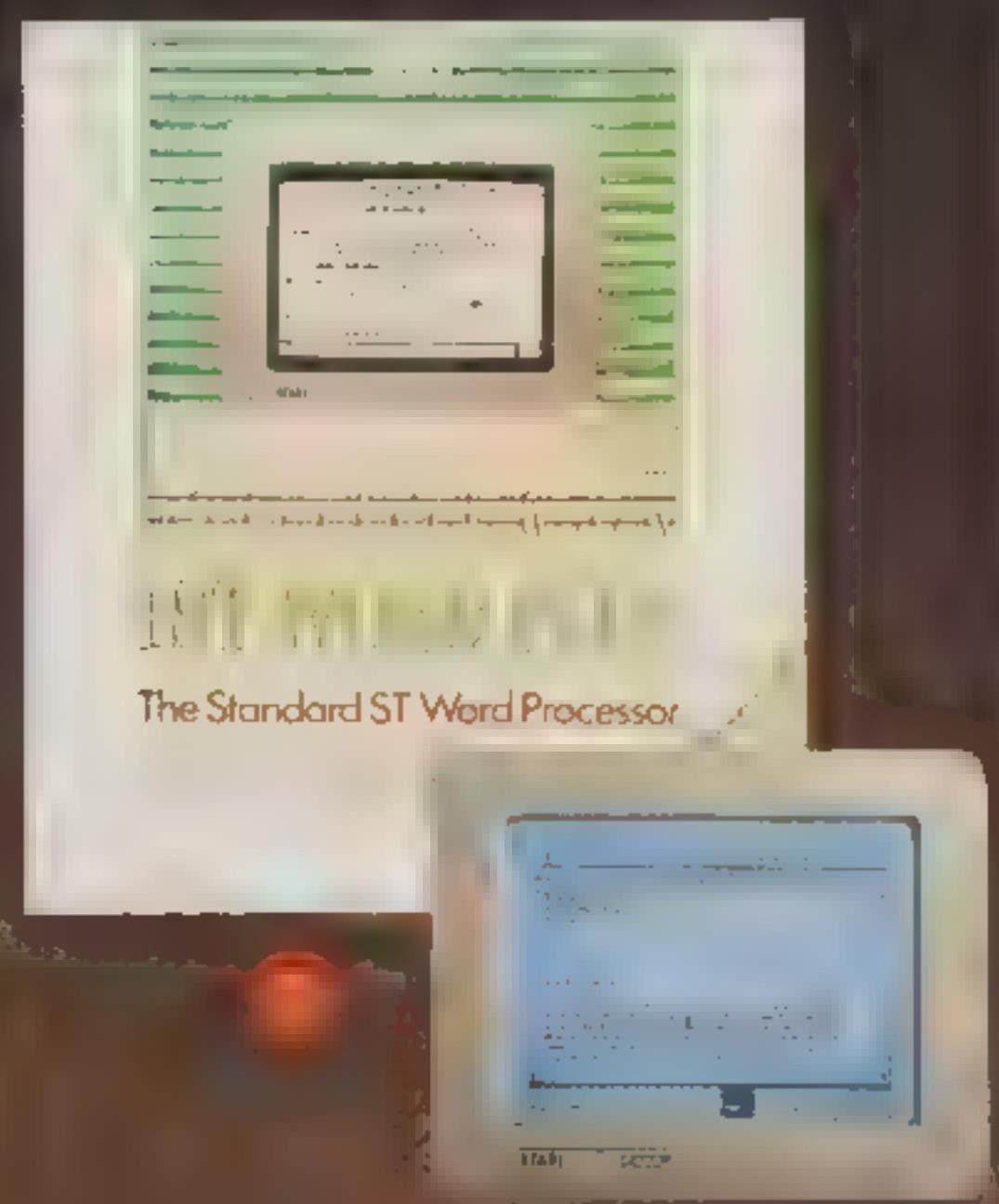
POSTCODE _____



- 1 **Hyperchart** – Atari: A complete business graphics package allowing output to overhead, Laser printer or 35mm slide.
- 2 **Superbase** – Precision software: Excellent database package offering full facilities and support, with complete programming abilities.
- 3 **1st Word Plus** – GST Software: The standard Word processing package for the ST, offers great ease of use and excellent WP facilities.
- 4 **LDW Power** – Atari: The best Spreadsheet

The ATARI ST –

The beginning ooo



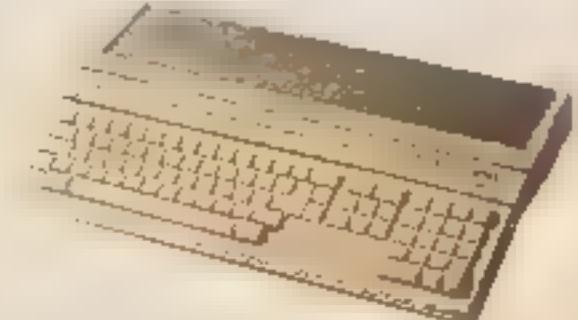
available for the ST. Lotus 1-2-3-compatible, fast and easy to use, but very powerful.

- 5 **Pagestream** – Softlogic: Desktop publishing package that is ideal for beginners and experts alike, full Gem utilisation.
- 6 **Cyber Studio** – The Cyber series offers a complete art, design and animation package, with full CAD facilities.
- 7 **Cubase** – Steinberg: A full sequencing package with an excellent array of features. A complete

music studio in your ST.

- 8 **Replay VIII** – Microdeal: The latest edition of the standard ST sound sampler, easy sampling of sound to use in your programs and sequences.
- 9 **Quartet** – Microdeal: A four voice polyphonic music synthesiser, compose your music on staves, play back on 1 of 100 sampled instruments.
- 10 **Personal Finance Manager** – Microdeal: Control your finances the easy way, many many functions, excellent graphing facilities.

More than just great games



WELCOME

The New Computer Express
Atari ST Guide is aimed at you. Whether you already own an ST or are thinking of buying one in the future, you should be reading everything that follows.

We have included easy to read guides to the very best in software, hardware add-ons and games for the ST. There is no cutting through dead wood in order to pick the product which will serve your needs; if it's in here then it's worth having. We guarantee it.

If you are thinking of buying an ST but don't know which machine in the range to go for, or which package in the shops is right for you, then read the full rundown of all the STs - and more - on pages 18 and 19.

Finally, do you feel lucky? If so, you should get your thinking head on, and turn to page 22 where you get the chance to win Atari's latest STE 1040 package.

Good luck, and good reading.

EDITOR

Tim Smith

CONTRIBUTORSAlex Sloboslay, Ed Ricketts, Alan Fitch,
Gordon Druce, Amanda Cook**PRODUCTION**

Francis Wasem

ADVERTISING

Helen Kirkhope



Beauford Court
30 Monmouth Street
Bath BA1 2BW
0225 442244

The Atari ST Guide is a supplement to *New Computer Express* and is not to be sold separately.

© 1991 Future Publishing. All rights reserved. No part of this publication may be reproduced without the prior written permission of the publisher.

CONTENTS**The Hardest Software**

There's everyday software, and then there's essential software.

We short list the very best non-games software for you

- Pages 6 and 20

**Peripheral Visions**

Add more life and extra power to your ST with the 'highly recommended' hardware add-ons listed here. We take expert advice and give it to you.

- Pages 9 & 10

**The Greatest Games?**

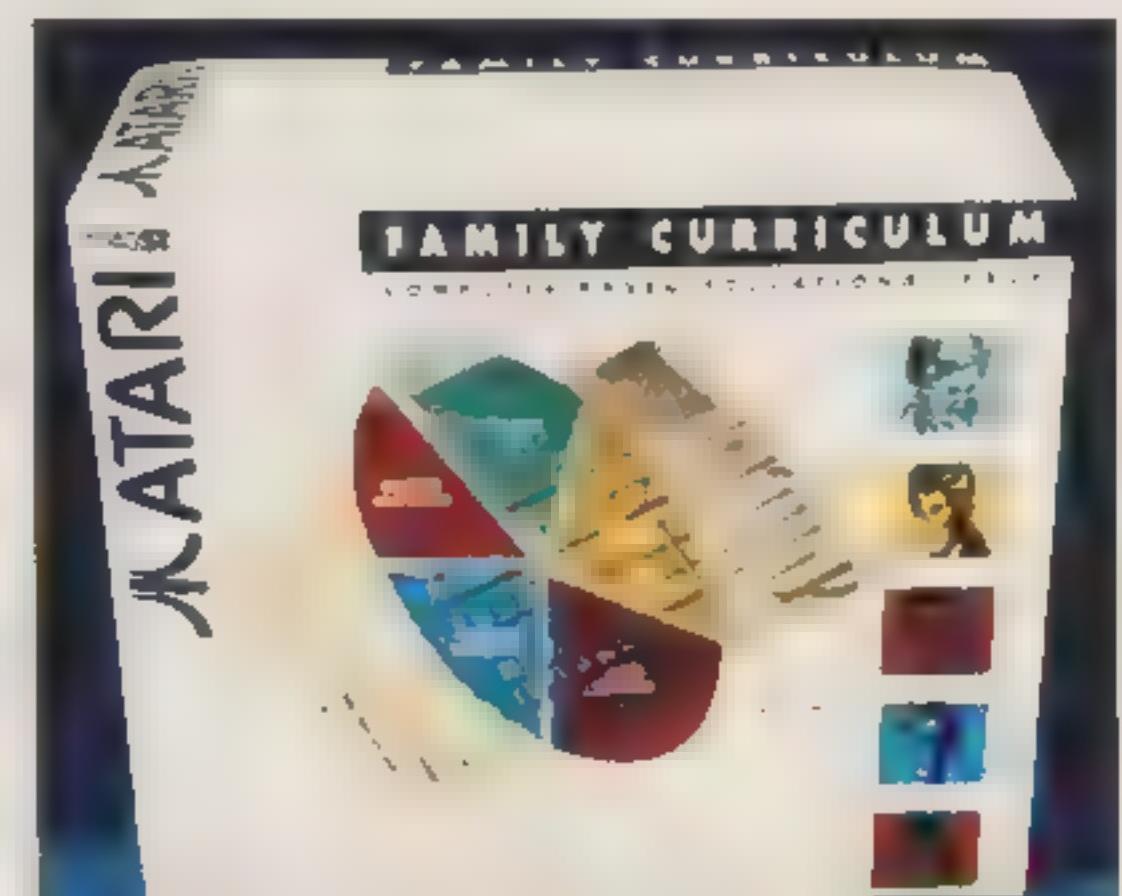
Okay, so we know that the ST can do more than "just play games", but that shouldn't stop you enjoying yourself. A guide to the best in ST fun...

- Pages 12, 13, 14

**Atari Talking**

Peter Staddon is the man who is trying to change the way we look at the ST. Find out what he has to say about new launches, old foes, Apple Macintosh and the future of the STFM.

- Pages 16&17

**WIN! WIN! WIN!**

Yes, it's your chance to win the latest STE 1040 package from Atari. Now selling in the shops for £399, you could have it for nothing.

- Page 22

NEW LOW PRICES FROM BCS

INCL FREE
LABELS

BULK BUYERS

50 3 1/2 DS/DD	£21
100 3 1/2 DS/DD	£33
150 3 1/2 DS/DD	£47
200 3 1/2 DS/DD	£60
400 3 1/2 DS/DD.....	£115
500 3 1/2 DS/DD	£135
1000	£CALL

Price incl. VAT & P&P

3 1/2 DS/DD

3 1/2 High
Density
60p

SONY
BULK **38p**

5 1/4 DS/DD....20p
5 1/4 DS/HD....38p

3 1/2 40 Cap Box.£4.00
80 Cap Box.£4.30

3 1/2 150 Cap
Posso Box
£14.95

5 1/4 50 Cap Box...£5.00
100 Cap Box.£5.75

STAR LC-200
Colour Printer
£199

STAR LC 24-200
Colour Printer
£310

Philips CM8833
MK II Monitor
£209

DISKS & BOXES

50 Disks + 80 Box	£23
100 Disks + 80 Box	£36
150 Disks + 80 Box	£50
200 Disks + 2 80 Boxes....	£64
400 Disks + 80 Box	£118
500 Disks + 4 80 Boxes..	£141

Price incl. VAT & P&P

100 3 1/2 HD
£57.50
inc. VAT & P&P

Add £3.50 P&P, add £4.00 for 3 day delivery, add £7.50 2 day, £9.00 next day (from despatch)
Cheques will be held for clearance

AMIGAS

Amiga 500	£310	Dust Cover.....	£5
Screen Gems.....	£355	1/2 Meg Upgrade.....	£29
+ Astra Games	£385	1/2 Meg + Clock.....	£35
Screen Gems 1Mb	£365	Cumana Drive.....	£63
Class of the 90's	£510	Ext. Amiga Drive	£56
First Steps	£510	1.3 Kickstart Upgrade.....	£50
Amiga 1500	£665	Mouse Mat.....	£2.50
Plus Monitor	£915	Zipstick	£11
A590 incl. 2Mb RAM	£355	Jetfighter.....	£12

Printer Lead	£8
Quickshot Turbo II	£9.50
Naksha/Logitec Mouse	£26

ATARIS

Lynx	£90
Discovery.....	£245
Turbo Pack.....	£330
Cumana Drive.....	£68
Dust Cover.....	£5

Call or send cheques/postal orders to:

**BCS LTD, 349 Ditchling Road, Brighton,
E. Sussex, BN1 6JJ**

Tel: 0273 506269 or 0831 279084

Trade/government/education orders welcome

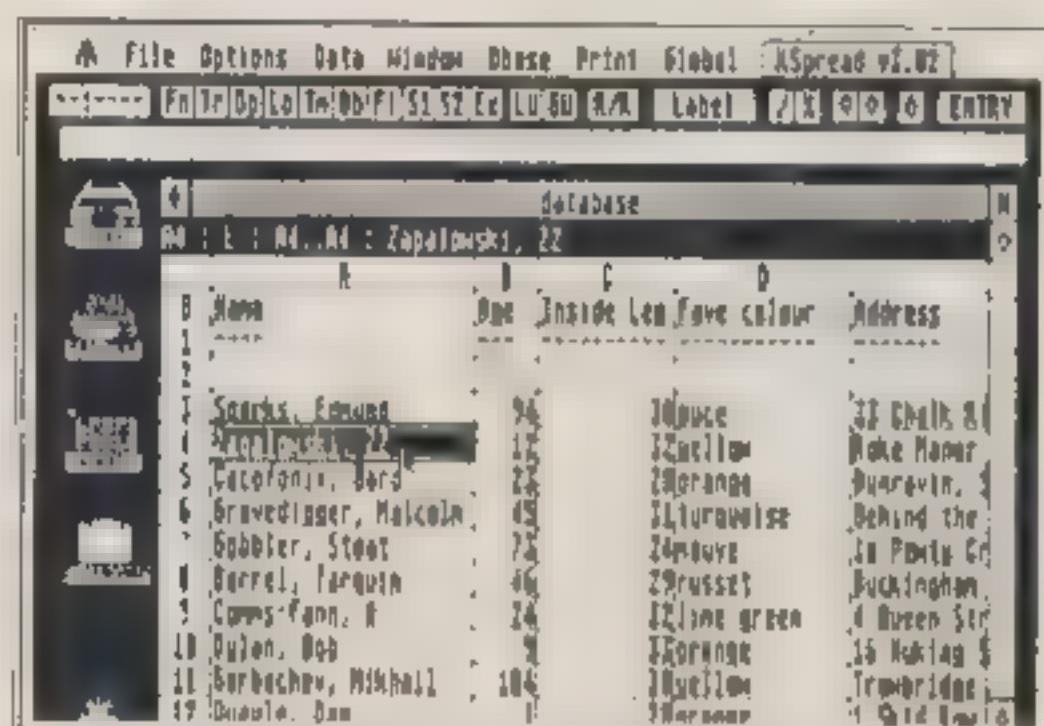


HARD SOFTWARE

What's the best in ST software? Alex Soboslay makes his first set of nominations and awards in the following categories: Spreadsheets, Databases, Comms, and desktop publishing. Read on for the winners.

SPREADSHEETS

K-Spread
v3 £89.95, v4 £129.95
Silica
Tel: 081 309 1111

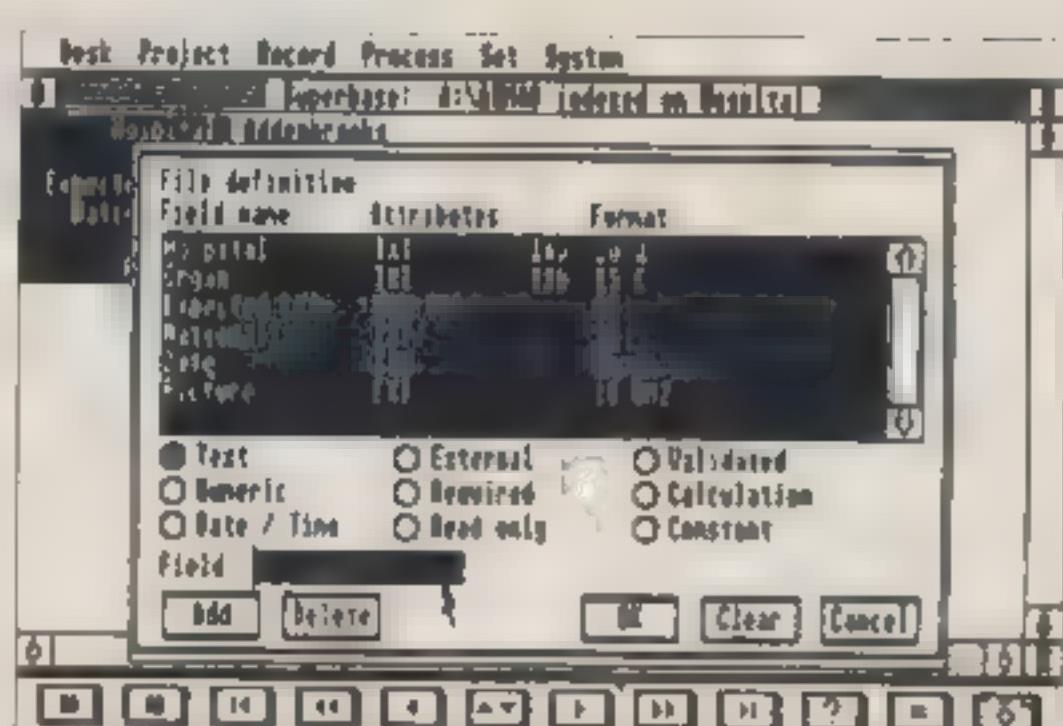


This comprehensive GEM-based spreadsheet from Kuma loads and saves Lotus, WKS, WK1, Symphony, ASCII and DIF files, ensuring compatibility with your office system and easy portability of data. It even uses Lotus-style commands, via menus at the top of the screen plus a good range of keyboard equivalents, which can be faster. Version 3 requires only 512K and includes macros, stats and trig calculations and conditionals, as well as database, financial and time/date calculations. What's more, there is an impressive range of user-defined functions, find/replace database facilities and friendly mouse-driven block copy commands. Calculations are very fast, but the system lacks 'double recalculation' – that is, it doesn't automatically make two passes to incorporate updated data into earlier cells which may depend on later cells. The window includes familiar icons like a trashcan, clipboard and printer – which makes it

exceptionally easy to use, but means that the display is limited to 13 rows by 7 columns initially. However, the width as well as the height of cells is adjustable. Version 4 adds graphs and GDOS output; it boasts over 200 functions, including everything version 3 does, but requires 1Mb.

DATABASES

Superbase Personal 2
£99.95
Precision Software
Tel: 081 330 7166.



Superbase is a fully relational database, meaning it is able to draw on linked items from different files, but despite its power it is fast and easy to use. It offers you a friendly GEM-based environment with VCR-style keys along the bottom of the screen display, making it very intuitive and simple to operate – and there are extensive tutorials in the manual to ease the beginner into it. It boasts full windowing, menu and mouse control for fast data manipulation, and ASCII import and export. What's more, it includes a straightforward mini-WP text editor with integral mailmerge facility and the

capability of dedicated label printing. Well thought out features include automatic record numbering, multiple fields, inclusion of constants and the option of designating files read-only to reduce the chances of accidentally erasing data. Batch files options speed up entry of data, and the program can search for and display external text files. What's really distinctive is its unique text and picture storage for all types of library application – you can actually include graphics in data. There is also a comms function, so you can send text or database files to another computer via modem or serial cable. The program includes extensive data validation options, applicable across multiple files, and it can be set to display help messages if you enter invalid data.

COMMS

Vanterm/Uniterm
£3 each
Softville PD library
Tel: 0705 266509.

No contest here: the best Comms software is Public Domain. Vanterm has a slight edge in user-friendliness and doesn't require any technical comms knowledge to make the best of it. It's a complete terminal program featuring support for Xmodem and Ymodem (fast data transfer protocols, used for sending data downline quickly and minimising on-line time). It's fully GEM-based, which means that it is easy to use, and it comes with documentation on disk and a help facility in the program.

Uniterm is feature-packed but hard to use without some knowledge, though the program does come with a text file including 50 pages of help. It includes an auto-dial option and a telephone book function to record frequently-used numbers. It supports Xmodem, Ymodem, Kermit and ASCII protocols, and it also has the ability to execute other programs from within the Uniterm shell. This means that you can call up a Zmodem download program if you have access to one. All in all, it's not bad value for three quid!

DESKTOP PUBLISHING

PageStream
£149.95
Silica
Tel: 081 309 1111

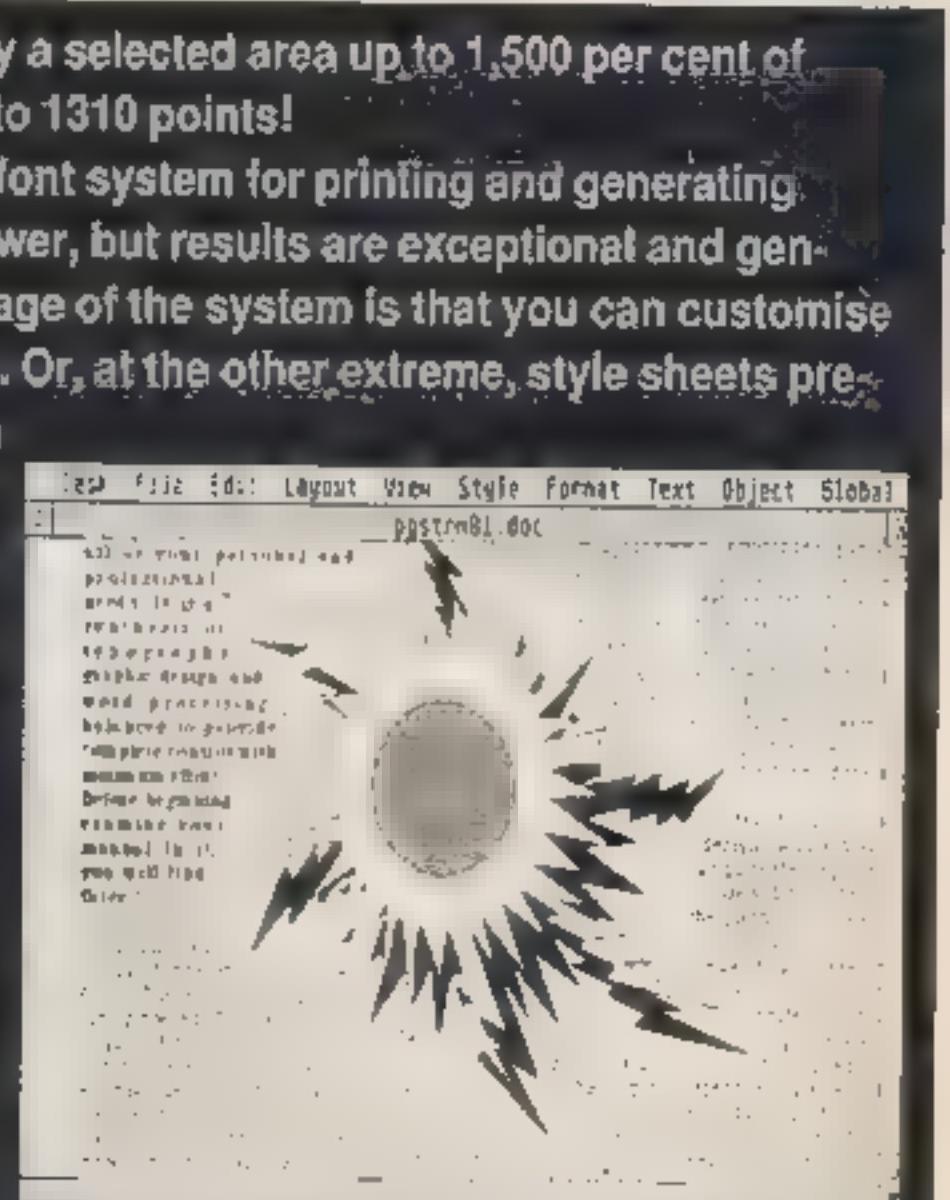
A powerful but remarkably easy-to-use DTP package, featuring an extensive menu bar layout and comprehensive toolbox – including text column object, picture reshaping icons and a comprehensive set of drawing tools with facilities for arcs and elliptic arcs.

Text and graphics importing are very good, with graphics handling particularly comprehensive: PageStream supports IMG scanned images as well as the usual art package formats, IFF, TIF, NEO, Degas (including compressed), and others, and text can be made to run around the most complex of images. Colours are limited only by your screen mode, and colour separation is sup-

ported. Variable zoom can magnify a selected area up to 1,500 per cent of actual size – and sizes can go up to 1310 points!

The program uses an outline font system for printing and generating screen display – which can be slower, but results are exceptional and genuinely WYSIWYG. Another advantage of the system is that you can customise existing fonts almost without limit. Or, at the other extreme, style sheets defining text style information can be saved and applied with a keystroke.

The latest version, v183, improves the speed of on-screen display and adds PostScript printer support as well as dot matrix. In all, a large variety of printer drivers is included, colour and industrial strength Linotronic machines among them. A dazzling range of features, all surprisingly accessible.



*Are you looking for a new start in life?
Or looking to improve what you already have?
Maybe Network can help.....*

Network's PROXIMA dtp program is generally recognised by professional printers, publishers and graphics designers as the best dtp software available for the Atari ST. ST Apps. readers will have seen our professional-user listing in the January issue, so we won't repeat it here. Suffice it to say that Network simply doesn't just stop at selling you the software and leaving you to sink or swim.

For a start, our firm has been engaged in printing and publishing everything from newspapers and magazines, down to business cards, for forty years. Since DTP is *supposed* to be about printing and publishing, perhaps you'll agree that it makes sense, when considering your own dtp requirements, to place your faith in the ONLY printer/publisher in the UK actively supporting dtp hard and soft-ware.

For a start, we NEVER market nor support ANYTHING which we haven't used in PROFESSIONAL circumstances to our own lasting satisfaction. That's why although we can supply certain well-known brands of hard and soft-ware off the shelf, at very favourable prices, we don't....at least not without giving customers a "warts-and-all" breakdown of the product. This way we KNOW we can have faith in what we are offering to the public. If and when better products come along, and WE are satisfied with them, then we'll get them to you at the best possible prices.

Apart from pride, one reason we have to try to get things right at the outset is that ALL our products are supported by a nationwide "forever" free help line. This runs till about eleven P.M. EVERY day, including week-ends. Our own business has always operated on a 24 hr. basis and we know from experience that the time things start to go wrong is just after everyone else has shut down for the day...or the week-end. We ensure that doesn't happen to Network customers.

Of course it costs an arm and a leg: if we sell you PROXIMA software at £135 plus VAT and you phone in with just one query, our margins are so tight that the profit on that sale has gone. Yet Network customers know that they can get free help, at any time, not just on the software they're using, but on the actual job they're trying to do with it. Sometimes this can involve phone calls stretching into hours as they go away and come back again. We don't care: the system has made us many, many new friends and we believe that they will stick with us as they expand their businesses or whatever.

Atari Products

The fact that you are reading this magazine shows you are an Atari devotee. So are we. We believe even the basic 1040 is an excellent business machine....in fact it forms the heart of our Proxima dtp package.

We are Atari dealers. And we support all Atari products, so if your hardware goes down after hours, at least you can get things moving with us, AT ANY TIME up till 11 p.m. Often we can put things right with telephone advice.

We can't match "box-shifter" prices....but they can't match our service. Furthermore, we give 10% off ALL Atari prices and even more off some selected items of hard and soft-ware. Each one of our network of advisors is an Atari expert, able to advise you on all aspects of Atari usage. You may not think that's important while you're making up your mind to buy....but just wait till you've got the machine up and running and want to find your way round GEM and TOS. And wait till that happens at nine o'clock of an evening!

At Network, service and quality are the name of the game.

Change Of Life

There are people all over the UK, and some abroad, who now know that for a very minimal outlay indeed, they can engage in a complete change of career....or establish a very satisfactory secondary income. They are people who have bought what we call our "Beyond Proxima" package. What this boils down to is setting you up as a PROFESSIONAL offset litho printer, usually working from home, though some people have expanded into shop premises. *If you're interested, we'll put you in touch with them.*

This scheme has all the benefits of a franchise scheme without the setbacks and ongoing financial commitment. Your TOTAL outlay can be under £5000. For that sum, you get what amounts to a complete *professional* print-shop, just as comprehensively equipped as the High-st. instant print shops (most of whom pay £30-50,000 for the chance, plus a forever percentage-of-=turnover commitment).

In the eighteen months this scheme has been running, with NOT ONE participant having any prior printing knowledge whatsoever, we've only turned up one deadbeat (two brothers who fell out with each other!). One retired traffic warden, working from home, turned over £15,000 in four months' working, on her own, in her living-room. Such figures aren't exceptional. If you want to know more...write and ask.

Whoops! What's this doing in an Atari mas.?

We all went for Atari for its computing power, speed and cheapness. But that isn't the ONLY way to go, now. Network has an American subsidiary and is importing direct from them extremely fast, powerful PC compatibles at astonishing values.

Our full 386 (NOT the SX!) comes with EIGHT mb of memory; eight expansion slots; 25 mhz clock speed (Landmark speed 32 mhz); 40 mb hard drive; choice of floppy drives or both; full 102 key keyboard; super colour VGA card with 14" colour monitor. The machine is called our PROXI-MAX 3. The price? A derisory £1500 plus VAT. For £2500 we'll bundle with the 386 the most powerful dtp software on earth: PageMaker, Windows, MSDOS and Corel Draw. If you comparison-shop, you'll know just what kind of bargain we're offering. PROXI-MAX 1 and PROXI-MAX 2 are 286 machines, 16 mhz, with similar spec. 1 is £1045, 2, a tower system, is £1095, all plus VAT. All systems can be customised. All are warranted for one year, unconditionally, and all servicing is effected in the UK within 24 hrs.

Getting into print

NETWORK can help you better than most when it comes to out-putting your work. We handle Epson and NEC dot matrix printers, but specialise in lasers--necessary for top quality. SHARP-2 mb memory, five emulations, only £1095.

HP LASERJET 111--includes simulated 600 dpi, only £1125.

HP LJ 111 *plus* extra memory *plus* PostScript--only £1500.

SHARP POSTSCRIPT- fast, 35 PS fonts, only £1500.

PROFESSIONAL LASER- 800 x 800 dpi (seven times normal resolution). ONE HUNDRED and THIRTY-FIVE FONTS!, super fast download, only £2350. *All above prices are plus VAT and are at least £400 LESS than rrp.*

INFORMATION AVAILABLE FROM:

NETWORK NEWS SERVICES Dock-nd. Tilbury, Essex

PHONE: 0375:859103 FAX 0375:856108

Ladbroke Computing International



Hard Drives

- Autoparking 3.5" mechanisms.
- Full metal case suitable as monitor stand.
- On/off button and DMA device selector mounted on front.
- Integral PSU.
- DMA Out port for daisy chaining.
- Megadrive controller, low power, controls up to 8 SCSI drives.

- Compatible with emulators such as Spectre GCR, AT Once.
- Up to 255 partitions, up to 1 Gigabyte in size.
- Selection of Accessories/boot partition with boot editor.
- Includes backup software and Midistudio demo software.

Price Breakthrough

We can now offer a range of hard drives all built around cached Quantum mechanisms with an 8ms average access time for the incredible prices shown below. QUANTUM mechanisms are used which are of the highest quality. These Quantum mechanisms are built to American military standard and include a 2 year manufacturers warranty (from date of manufacture) offering the best possible protection for your data.

52Mb 11ms (Quantum drive)	£ 419.99
105Mb 11ms (Quantum drive)	£ 529.99

Add £20 for HD with ICD board (includes clock). Phone for other capacities.



3.5" Drives

CSA 354: ST 3.5" drive.	£ 69.99
CAX 354: Amiga 3.5" drive.	£ 59.99
ST Internal drive upgrade.	£ 54.99

The ST internal drive requires the ST's case to be modified (full instructions supplied). The external ST drive is a high quality, slim, quiet drive which comes complete with integral PSU and so does not draw power from the ST which could cause problems. Add £3 P&P for drives.



Quality Disks

Quantity	Bulk Sony or Kao		TDK Brand Boxed in 10's
	Loose	Boxed	
10	£ 5.99	£ 6.99	Includes x10 Ryford black plastic box £ 9.49
40	£ 20.99	£ 26.99	Includes x40 Lockable disc box £ 34.99
100	£ 48.99	£ 57.99	Includes x100 Lockable disc box £ 84.99
150	£ 66.99	£ 83.99	Includes x150 Plastic Stackable disc box £ 125.99

All disks carry unconditional guarantee. Add 80p P&P for each 10 disks or £3.00 for 100 and above.

ST & Amiga Packs

520STFM Discovery Pack	£279.99	520STE Turbo Pack	£349.99
1Mb STE Turbo Pack	£369.99	2Mb STE Turbo Pack	£409.99
4Mb STE Turbo Pack	£479.99	(ST) Tenstar pack, M/mat, J/stick	£30
Amiga 500 Screen Gem's Pack	£369.99	Amiga 500 Computer	£329.99

A4 Scanner Monitors

- 200 Dpi scanner.
- 16 grey scales or Black/White mode.
- High quality thermal image printer.
- Acts as photocopier.
- ST & Amiga £449.99
- PC version £479.99.
- Requires 1Mb RAM.

IMG scanner still available at an incredible £49.99

- Atari SM124 Mono £ 109.99
- Philips 8833MkII Colour £ 249.99
- Philips 15" TV £ 269.99
- Includes: FST, remote control, Scart input (giving near monitor quality display), 60 tuner presets, sleep timer and Fastext.

All displays come with Scart cable. Deduct £10 from Monitors only, if bought with computer.



You can phone your Access or Visa card details or send a cheque/postal orders made payable to Ladbroke Computing International. Please allow sufficient clearance time for cheques.



Please Read: Terms of Sale

We are the longest established Atari dealer in the UK. We have developed an extensive customer service policy which means that we test all Hardware/Software prior to despatch to ensure that goods arrive in working order. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. This isn't just our opinion, we were voted 'Best Dealer 1989' by the readers of ST World magazine, not for 'the number of boxes shifted', but for quality service.

On Site Warranty: We have recently extended our backup programme by offering on site warranty as an option on all ST's. We already offer this service on All Star printers and Philips monitors listed.

All prices are correct at copy date 21/03/91, and are subject to change without prior notice. All prices are accurate while stocks last. Phone for up to date prices. All prices include VAT, there are no hidden extras (WYSIWYG). Delivery (in Mainland UK) is free, on orders over £100 (add £10 for next day courier delivery). All prices available on Mail Order. Shop prices may differ.

Midistudio Master

Midistudio Master £129.99

Midistudio Junior still available £49.99
Phone for upgrades

FAX/Modem

AT 12Mhz Desktop	£ 449.99
AT 16Mhz Desktop	£ 499.99
AT 16Mhz VGA Mini tower	
40Mb	£ 849.99
386SX Mini tower	£ 699.99
386-25 VGA Mini tower	£ 1194.50
Mono Monitor	£ 99.99
VGA Colour Monitor	£ 299.99
PC Emulators for ST	
PC Speed, XT Emulator	£ 99.99
AT Speed, AT Emulator	£ 189.99
AT Once, AT Emulator	£ 199.99

£200

PC's

Use your ST or Amiga to send faxes.

Fully featured modem accesses bulletin boards/commercial systems.

- Fully Hayes compatible.
- Auto dial/answer
- 300/1200/2400 Baud
- For ST or Amiga
- Cannot receive faxes. Not BT approved.

512K STFM, 16 or 4 chip kit

2Mb ST board+chips, kit	£ 129.99	4Mb ST boards+chips, fitted	£ 279.99
TOS 14 kit (8 or 2 ROMs)	£ 39.99	STFM Blitter chip, kit	£ 39.99
512K SIMM/SIPP (STE)	£ 24.99	2Mb SIMM/SIPP (STE)	£ 79.99
Amiga 512K no clock	£ 26.99	Amiga 512K with clock	£ 29.99
Exchange STFM PSU	£ 59.99	ROM switch + TOS 14	£ 49.99

Please check the configuration of your machine with our staff before ordering any upgrade and have your machine open when you phone. All upgrades/repairs carried out by our service centre carry a 90 days parts and labour guarantee. Our service centre can repair/upgrade any ST, Amiga. Please phone for repair/upgrade charges. Please add £150 P&P for upgrades priced under £100.

Spectre GCR

"Power of the Mac, without the price."

- Reads, writes and formats Mac disks.
- Supports Hard drive and second floppy.
- Compatible with STE, Stacy.
- 30% bigger screen area than Mac Plus.
- Runs 20% faster than Mac Plus.

Spectre GCR V3

£290

Phone for 128K ROM's

We are the consistently longest serving supplier



Printers

All dot matrix printers come complete with IBM Centronics cable. All Star printers include 12 months on site warranty, UK Mainland only.

Star LC-10	140/36cps	■ 169.99	Citizen 120D+	120cps	£ 139.99
Star LC-24/10	£ 209.99	Citizen Swift	192/64cps	£ 319.99	
Star LC-200 colour printer	£ 219.99	Citizen Swift Colour upgrade	£ 39.99		
Star LC24-200 222cps	£ 249.99	Citizen Swift 9	£ 209.99		
Star LC24-200 colour printer	£ 319.99	64K buffer/3 input switcher	£ 29.99		
Star Laser 8DB 2Mb RAM	£ 1849.99	256K buffer/3 input switcher	£ 49.99		

(0772) 203166 Fax 561071

Shop & Mail order premises: 33 Ormskirk Road, Preston, Lancashire, PR1 2QP Open Monday to Saturday 9:30am to 5:00pm. Phones answered from 9:00am. Dealer enquiries welcome. Ladbroke Computing International is a trading name of Walton Marketing Limited. All trade marks recognised.

TOP ADD-ONS FOR YOUR ST

Out of the vast range of peripherals available for your ST, Alex Soboslay selects the top buys in each category

MODEMS

Dataphone Pro 4 • £458.85
Quest Dataphone
Tel: 0733 51029.

A top-flight professional modem, BABT approved, with a built-in microprocessor and battery back-up to retain your settings.

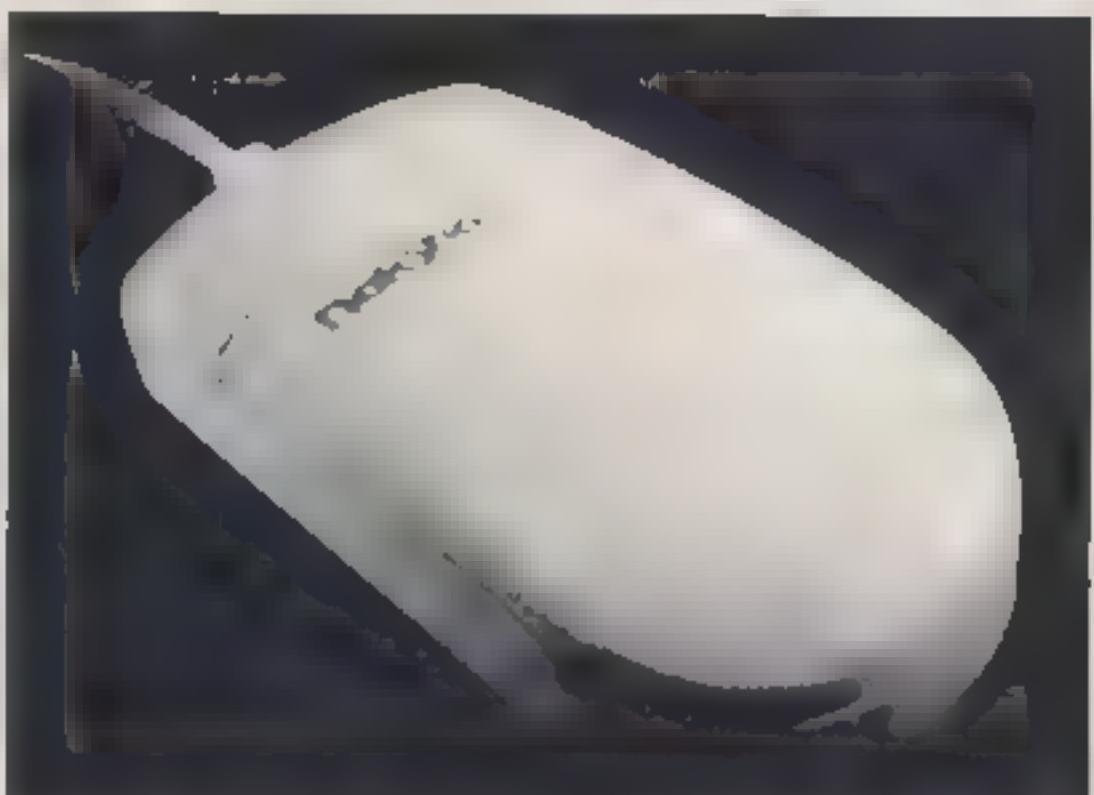
Its speed buffering supports terminal speeds of up to 9600 baud – all you'll ever need.

Features include extended Hayes AT and V25bis command sets, internal V54bis modes, automatic line speed and mode recognition, synchronous/asynchronous operation, auto-dial and auto-answer, and intelligent multi-speed operation – with LEDs on the front to indicate whether it's working in V21 (300 baud), V23 (1200/75 baud), V22 (1200 baud) or V22bis (2400 baud); other baud rates can be selected with switches on the back of the unit.

What's more, the Pro 4 has auto MNP mode – that is, it automatically uses the Microcom Networking Protocol error correction system if it's talking to

another modem that can handle it, and doing so also compresses data and can halve throughput time.

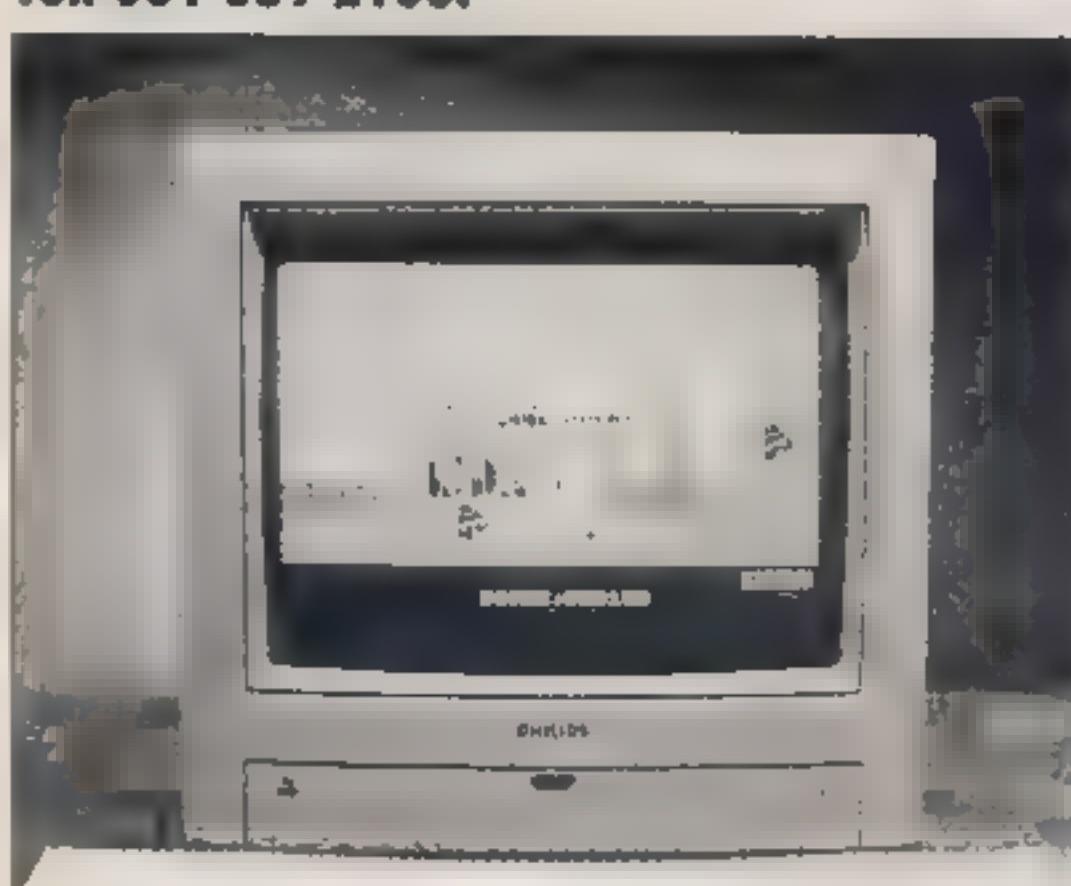
It's reliable enough to be the unit chosen by Malcolm Burridge of the excellent Bath BBS bulletin board (0225 840060). If you don't need quite this level of sophistication, try the US-made Supra 2400 modem (£149.95 Surface Ltd 081 566 6677) – it's fully Hayes compatible, boasts auto-dial and auto-answer (tone or pulse) and can cope with 300, 1200 and 2400 baud.



the foam sort. Comfortable to use, with good microswitch clicking action and large buttons.

MONITORS

Philips CM8833 Mark 2
£310.49
Philips
Tel: 081 689 2166.



An attractive, distinctively-styled colour monitor, with 14-inch screen, 600 x 286 dot per inch resolution, stereo sound (especially useful if you have an STE) and a green screen facility. Designed and manufactured to

meet anticipated European monitor safety standards. It accepts TTL-digital and RGB-analog computer input signals (using a 9-pin D-type socket rather than the more common SCART lead), as well as CVBS input for video signals, and features phono audio inputs for use with an STE – and even has a stereo earphone socket. What's more, with an optional tuner it can even receive TV pictures. The most-used controls are conveniently located at the front, behind a neat fold-down flap. It's excellent for both low- and medium-res display.

MICE

Naksha Mouse
£28.95
Naksha
Tel: 0925 56398.

A smooth, very well-built mouse from a reputable maker. The ball sits snugly in its case and doesn't make life hard by jiggling about and causing any of those old wandering pointer problems. Operates at a high 280 dpi resolution, so you need relatively little effort to move the pointer across the screen. Comes complete with an exceptionally long lead, a holder and a sensible rubbery mouse mat that doesn't get worn and threadbare like

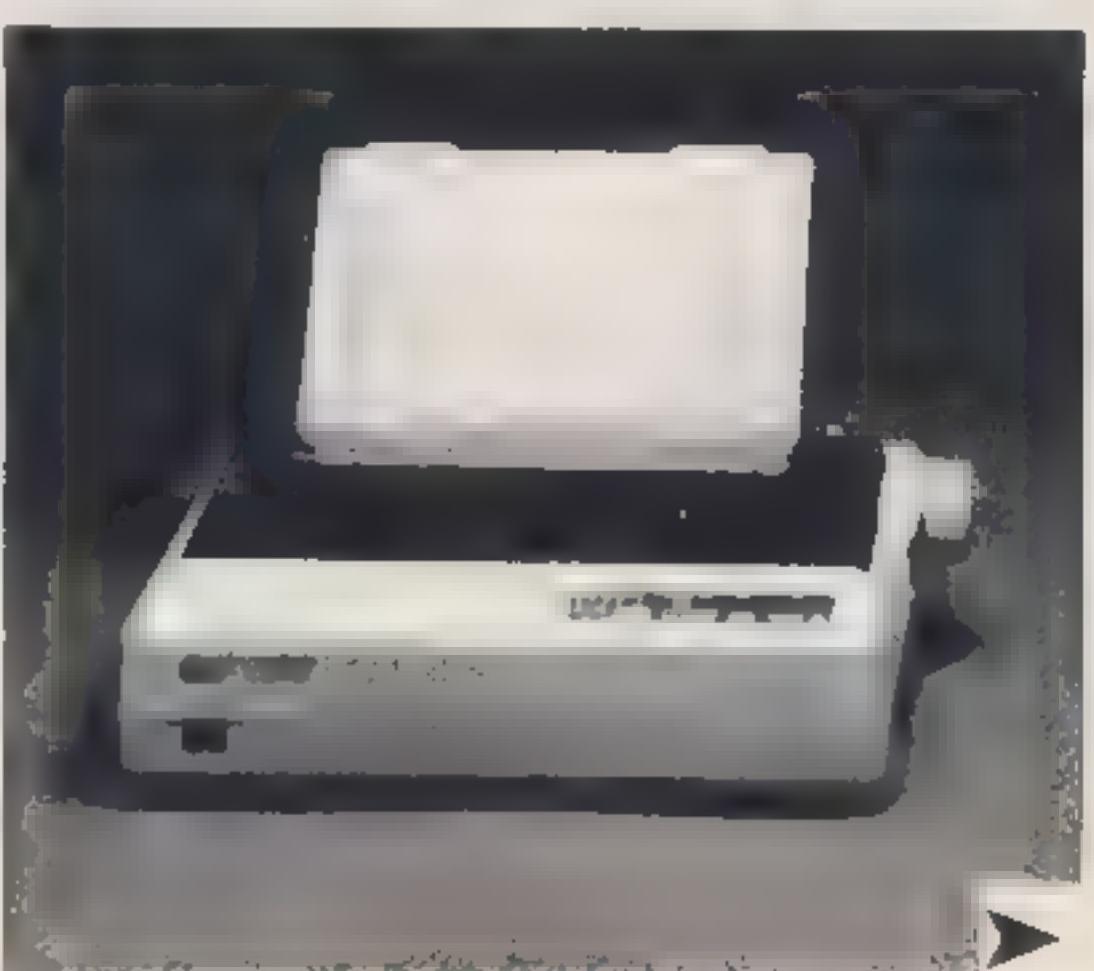
PRINTERS 9-PIN

Star LC-10
£263.35
Star Micronics
Tel: 0494 471111.

In ST Format's recent survey of 9-pin printers, this came out a clear winner. Attractively designed, with its main switch on the front where it should be and clearly-marked switches on the top. Has a parallel interface only (though an in-line converter is available if you really need a serial link), positioned at the side out of the way of the continuous paper feed at the rear.

The push-feed paper tractor automatically parks the continuous paper out of the way so you can use single sheets from the guide attached at the back of the top panel. The easy-to-use switches control print pitch and NLQ print styles (there are four available, plus italic versions of each), and the printer can be pre-configured using combinations of the front-panel switches to override software style commands.

The buffer is a large 4K, and there is an excellent



range of special printing effects, including double-height. Print quality is good and operation is quiet, if slower than average in NLQ. The printer provides graphic characters in both the Epson and IBM control sets, and is switchable via two DIP switches.

The only drawback is that the DIP switches are awkwardly located under the head-mounted ribbon cartridge. The LC-10 is strictly speaking now discontinued, but it and its colour version are still widely available.

Its successor the LC-200 (£297.85) is just as good and, with the addition of a colour ribbon fitted, it can produce colour output.

24-PIN

Star LC24-200
£366.85 (colour version £424.35)
Star Micronics.



Another Star, the LC24-200 offers exceptional versatility through electronic DIP switches and front-panel presets. Emulation of both the Epson and the IBM character sets is flawless, and the quoted print speeds are impressive.

This printer also has the standard Star push-feed paper system which comes with its handy paper parking facility, so you can leave continuous paper loaded but parked neatly out of the way while you feed single sheets in at the top.

The LC-24-200's buffer memory is 7K as standard, but optional RAM cartridges are also available which can take that up to 39K. A huge range of additional fonts is available, once again on optional cartridges. These are loaded through the easily-accessible cartridge port. Other options include a serial/parallel converter and a handy cut-sheet feeder. You couldn't ask for more from a dot-matrix printer.

HARD DISK

Vortex Datajet
Broad range from 30 MB for £499 to 180 MB for £1,499
Silica
Tel: 081 309 1111.

These German beauties are not cheap, but you get what you pay for. In ST Format's recent survey of Hard Disks, these met the challenge of all comers.

All drives in the range have custom-designed circuitry, including Vortex's own 'microboard' – a PCB that not only switches the drive monitor on and off but also controls the data transfer itself, the hardware write-protection, the SCSI host adaptor (that's the interface system which connects the ST and the hard disk) and the cooling fan – which comes on only when it's needed, so you don't get that annoying constant whine. You can write-protect the whole disk simply by flicking a DIP switch on the back of the casing.

Access times are a very respectable 25ms, and the units are both auto-booting

LASER PRINTER

Star Laserprinter 8 II
£2,172.35
Star Micronics.

If you're looking for a laser printer, you're looking for quality rather than compactness – which is just as well, because this one comes in a fairly large case and feeds paper from a 150-sheet tray projecting still further from the front or from a single sheet feed guide on top of the paper tray.

Oh, and you might need access to the pull-down tray at the rear for face-up delivery. But what it delivers is worth it! The range of fonts is excellent and includes Times Roman and Prestige.

You get the typical laser printer 300 dpi resolution, better-than-average 8 pages per minute output, and even the capacity to print in both portrait and landscape orientations on the same page. The printer emulates the Hewlett Packard LaserJet Plus, IBM ProPrinter, Epson EX-800 and Diablo 630, so you should have no trouble finding a printer driver in your software to work it. There's a good comprehensive manual, and a sensible control panel with membrane-type switches and the usual 16-character LCD display.

Both parallel and serial ports are standard, and 1MByte of memory is supplied; you can add more via a panel at the side – an extra megabyte (for £228.85) or even more. There are also two font cartridge ports at the front under the paper trays.

The toner and drum cartridge are in one piece which simply slides out for replacement after a quoted 4,000 pages, with a replacement cartridge setting you back £109.25.

FLOPPY DRIVE

Cumana CSA354
£75.99
Silica
Tel: 081 309 1111.

A very sound, reliable 3.5 inch drive from a well-established and highly-regarded manufacturer – in fact, Cumana drives are so reliable that they're recommended by many companies, including suppliers of back-up software. This one's a slim 25mm drive unit, with low noise and low power consumption quoted and a capacity of 1MByte, depending on how it's formatted. Indeed, it's especially useful if you're working with oddly-formatted disks that don't conform to the standard nine or ten sectors, 80-track format. It comes with no

and auto-parking – the drive head automatically parks itself clear of the disk surface when you switch off, ensuring that data can't be damaged if the unit is moved.

A drive output socket (throughport) on the back of the casing enables you to chain more than one drive to the ST or add a laser printer. The accompanying software is very comprehensive, covering back-ups and auto-boot configuration, and extended partitions are fully supported so that you can format beyond 16Mb, compared with the standard 10Mb.

throughport or other frills, but an internal power supply is fitted – which the experts generally agree is preferable to budget drives that take their power from the ST itself. This drive also has the advantage that it's compatible with many popular micros if you buy the right leads.

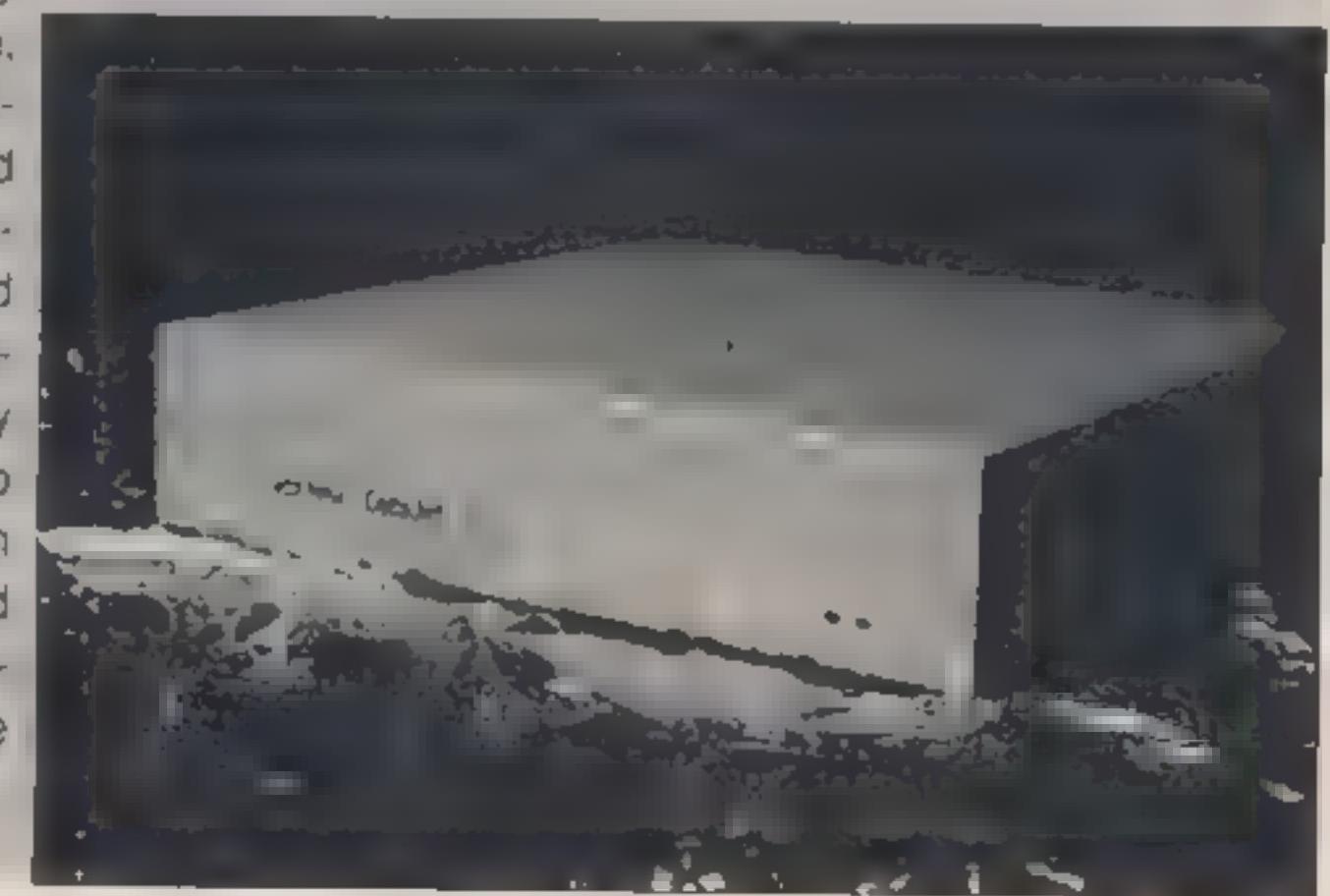
SCANNERS

Golden Image Scanner
£179.00
Evesham Micros
Tel: 0386 765500.



This neat little hand-held unit comes with a generously long cable, and its sturdy interface plugs into the ST's cartridge port. It scans in four resolutions – 100, 200, 300 and 400 dpi, though the latter two are very memory-hungry and 200 dpi is adequate for most uses. Only monochrome results are possible, but there are three scanning modes, enabling you to scan text or black-and-white in the first mode and colour originals in the other two, with the scans being "dithered" to produce acceptable grey scales.

The contrast control is adjustable to help you get the sensitivity right. It requires 1MByte of memory and a double-sided disk drive, and the maximum width of scan is four inches, but maximum length is limited only by your ST's available memory. The scanner's real advantage is the exceptional Touch-Up software included, which can import and save images in virtually any format, including those used on PCs and Macs. It's not as fast as some other scanners (for example the Daatascan Professional, £179.99 from Pandaal Marketing, 0234 855666), but it scores with its image processing power and especially its software. A comprehensive manual and a power supply unit with 13-amp plug are included in the package. ■



MIDWINTER

III

FLAMES OF FREEDOM

The Flames have been lit - A new age dawns.

Midwinter II: Flames of Freedom will be available for your Atari ST, Commodore Amiga and IBM PC compatibles in the Spring of 1991.



MASTERS OF STRATEGY

MicroProse Unit 11 Hampton Road Industrial Estate Tetbury Glos GL8 8LD

ST GAMES THAT TAKE

The ST is not just a games machine but when it turns its chips in the direction of recreation it certainly has a wealth of software to choose from. Just to prove this, Ed Ricketts games reviewer for *ST Format* is here to take you through the essential ST games to have in your collection.

SHOOT-'EM-UPS

XENON 2

Mirrorsoft

Tel: 071 928 1454

£24.99



The Bitmap Brothers breakthrough game, it improves a thousand-fold over the original. Plot? There isn't any - it's a massive orgy of violence and alien slaughter in which you're an initially puny spaceship intent on destroying every living thing in your way. Collect the tokens as you progress through this vertically scrolling blaster and visit the shop to transform your VW Beetle clone into the equivalent of a dirty great Sherman tank. Fantastic graphics, weird backgrounds, lovely animation and a soundtrack by Bomb the Bass help keep that one-more-go factor high. A classic.

Graphics:

Sound:

Instant Appeal:

Lasting Interest:

Addictiveness:

9

8

9

8

9

TURRICAN 2

Rainbow Arts

Tel: 0322 292513

£24.99

Battle your way through every one of these eight levels and you'd best change your name to HAL, because you ain't human. Each stage covers a different area, progressing from scaling rocky heights over waterfalls in Level one, to underwater antics in Level three. Get passed this lot and you finally meet the Big Cheese



Simple but not easy, Turrican 2 offers a real challenge

itself, the Giant Machine, on Level eight. Shoot the aliens to release tokens and provide extra fire-power, such as the death-dealing flame-thrower, along the way. Excellent visual effects (over 2Mb of graphics in all) are combined with silky smooth scrolling and bone-shaking sound effects to make a game that the SAS would be glad to train with.

Graphics:

9

Sound:

8

Instant Appeal:

9

Lasting Interest:

8

Addictiveness:

8

R-TYPE

Activision

(Watch out for the budget version)

R-Type was the coin-op noted for its weird organic-style creatures combined with fabulously addictive gameplay.



R-Type: A classic coin-op converted to a classic game

Against all the odds Electric Dreams managed to create a superb conversion, keeping the graphics and addictiveness in the 16-bit conversion, even down to the huge spaceship on level three. A horizontally scrolling game which features large well-drawn sprites, impressive explosions, power tokens to beef up your ship and the strangest, largest end of level aliens you ever did see.

Forget that the scrolling could have been smoother, forget the annoying soundtracks - just feel the quality of the gameplay.

Graphics:

8

Sound:

6

Instant Appeal:

9

Lasting Interest:

9

Addictiveness:

10

STRATEGY

Powermonger

Electronic Arts

Tel: 0753 49442

£29.99



How do you manage to top *Populous*? Write a game that's basically similar but a thousand times more advanced technically. That's what Bullfrog did with *Powermonger*. Playing the role of a fallen Captain, your aim is conquer any one of 195 territories, chosen from a vast map, by force, subterfuge or intelligence. Up to three other players will be attempting the same thing, so it's not all plain sailing. Issue commands to the people via the icons - you can invent weapons, attack other townships, join forces with another leader or spy on them. Effects are light years ahead of *Populous* - pseudo-fractal landscapes, variable zoom and viewpoint are coupled with immensely atmospheric sampled sound effects to create a believable and realistic world.

Graphics:

9

Sound:

9

Instant Appeal:

6

Lasting Interest:

9

Addictiveness:

8



A huge and absorbing game, *Midwinter* has it all

Midwinter

Microprose

Tel: 0666 504326

£29.99

In the year 2099, a meteorite has struck the earth, causing a global freeze and the creation of strange new land masses. You play the leader of a group of 32 people intent on surviving in this cold waste, desperately struggling against a hostile force determined to take over your food factories and mines. Played in a massive game world with visuals in solid 3D, virtually endless variations to gameplay and an original plot,

MAKE YOU FURTHER

Midwinter looks as if it will be bettered only by its forthcoming sequel, *Midwinter II: Flames of Freedom*.

Graphics:	9
Sound:	9
Instant Appeal:	8
Lasting Interest:	10
Addictiveness:	9

Supremacy
Melbourne House/Virgin
(071 727 8070)
£29.99



A space opera on a grand scale: *Supremacy*

God games are all the rage these days, and deservedly so, when they're as playable as *Supremacy*. Beginning with a single planet and no way of supporting life, you must establish a colony and build your armies to protect yourself from one of four computer-controlled enemies of varying intelligence. Colonise new planets, attack your opponents and win through to become the supreme controller of the planetary system. A strategy game with enormously detailed and attractive graphics, similar but far superior to *Millenium 2.2*. *Supremacy* will keep you occupied until the stars fall - well, nearly.

Graphics:	9
Sound:	8
Instant Appeal:	7
Lasting Interest:	9
Addictiveness:	9

PLATFORM GAMES

Flood
Electronic Arts
(0753 49442)
£24.99



Aquatic antics and platform puzzles: that's *Flood*

Bullfrog broke with their normal style of game when they wrote *Flood*. It's a fun platform game over 42 levels featuring a character called Quiffy who can swim and stick to ceilings.

On most levels there's a tap which can't be turned off, so the water level gets higher the longer you go on. You have a limited supply of oxygen, but don't spend too long underwater or it's curtains.

Flood features some excellently animated creatures and fiendishly arranged puzzles. But it's not just good looks, it also provides a real challenge for platform aficionados.

Graphics:	8
Sound:	8
Instant Appeal:	10
Lasting Interest:	8
Addictiveness:	9

ADVENTURES

Prince of Persia
Domark
(081 780 2222)
£24.99

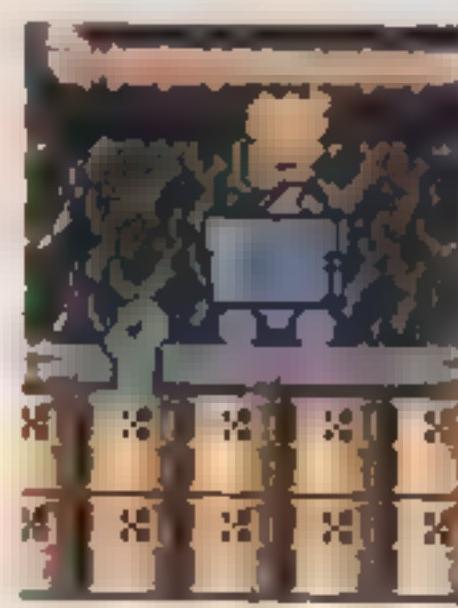


film quality animation and some involving puzzles - Prince of Persia

Stonkingly good animation lifts this ladders 'n' levels game from the realms of a simple puzzle to an immensely playable romp through a Far Eastern castle. Starting with the dungeons, you have just one hour to search out the Princess before she is married by the evil Vizier. Useless plot, but the gameplay makes up for it. Every little movement is so well animated you'll spend ages just watching the Prince running about, falling off ledges and being stuck with a sword. Some real challenges, too - it's not all plain sailing.

Graphics:	9
Sound:	7
Instant Appeal:	9
Lasting Interest:	9
Addictiveness:	9

Rick Dangerous
Microprose
(0666 504326)
£24.99



Rick Dangerous II - Rick Dick to his friends

If you enjoyed *Rick Dangerous*, which most game players worth the name obviously did, then you'll love the sequel. Yes, the man with the jump is back, and this time he's bought his armoury.

All the gameplay and cunning traps of the first game but with added features such as sliding dynamite, grenades and a laser.

This time round there's full horizontal and vertical scrolling, so there's more freedom of movement; the graphics are improved (the backgrounds are far more varied and there are lots more enemies thirsting for your blood); and the puzzles, features and traps are ten times as nasty as *Rick Dangerous 1*.

Fortunately it's not nearly as difficult to get anywhere as in the prequel, since you can start on any one of the first four levels.

Graphics:	6
Sound:	6
Instant Appeal:	9
Lasting Interest:	8
Addictiveness:	8

ADVENTURES

Operation Stealth
Delphine/US Gold
Tel: 021 625 3388
£24.99



The icon driven graphic environment is definitely the direction in which adventures are going. *Operation Stealth* is an excellent example of how good a game like this can be when done properly. Playing Agent John Glames your aim is to track down a missing Stealth Bomber - not something that's likely to be lost, admittedly. Everything is controlled by pull down menus and icons, so interacting with the environment is very easy. Graphics haven't been neglected, either: most objects have a picture to describe them and the backgrounds are very detailed and authentic. An adventure that even non-adventure players would enjoy playing.

Graphics:	9
Sound:	8
Instant Appeal:	7
Lasting Interest:	9
Addictiveness:	9

B.A.T.
UBI Soft
Tel: 0252 860299
£34.99



The best selling ST game of the moment and with good reason. *B.A.T.* is a futuristic graphic adventure with 1,000 locations, and once again it's icon controlled. You're from the Bureau of Astral Troubleshooters who are after someone by the name of Vagnor who's out to topple your planet. Along the way you'll meet all sorts of strange characters including Stickrobs and Glokmups, not all of whom are entirely friendly. Graphics are top notch - rating in both the weird and futuristic stakes, and 16 track sound is provided by the extra sound card which is included in the, admittedly high, price.

Graphics:	9
Sound:	10
Instant Appeal:	7
Lasting Interest:	9
Addictiveness:	9

Damocles
Novagen
(021 449 9516)
£24.99



Feel the width and the quality - Damocles

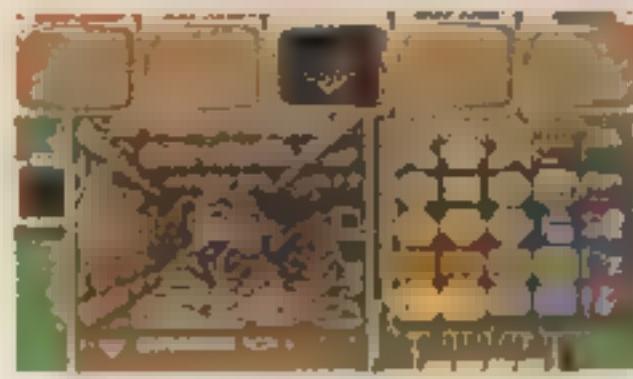
Certain programmers just don't know when to stop. Paul Woakes, author of *Mercenary*, took four years to write this game and it's no wonder when you look at it. A whole solar system of nine planets is yours to explore as you try to halt the comet Damocles before it collides with the planet Eris. Hundreds of locations, all displayed in solid 3D, contain many tricks and traps to keep you playing even after you've completed your main task. There are 16 million individually numbered pyramids on the planet Midas and you can visit each and everyone one!

ATARI ST

GAMES

Graphics:	8
Sound:	2
Instant Appeal:	9
Lasting Interest:	10
Addictiveness:	9

Captive
Mindscape
Tel: 044 486761
£24.99



A role playing game extraordinaire in the style of *Dungeon Master*. Far in the future, you've been imprisoned for 200 years when you're accidentally woken. Your only thought is for escape, and the only way to do it is to remotely manipulate four droids to try and find you in your cell. Being droids, you can add parts to them along the way to enhance their abilities; likewise, things can go drastically wrong, such as their vision failing at a crucial moment. Fiendish puzzles and complex gameplay mean this isn't something you'll finish in one afternoon, but the futuristic 3D graphics and sampled sounds will keep you in it long into the night.

Graphics: 9
Sound: 8
Instant Appeal: 8
Lasting Interest: 9
Addictiveness: 9

SIMULATIONS

Kick Off 2
Anco
Tel: 0322 292518
£24.99



The undisputed king of soccer sims. No other football game offers as much flexibility, as many options or as much playability as this. Choose from playing in position or as a team, against the computer or another player, on four different pitches, with four different wind strengths, at five different levels, the list of options is endless. Small sprites on a perfectly scrolling pitch and excellent touches such as the way a player limps when he's injured mean you won't be able to stop playing KO2 once you get the hang of it - even if you're not into footy.

Graphics: 7
Sound: 8
Instant Appeal: 8
Lasting Interest: 10
Addictiveness: 10

MiG-29 Fulcrum
Domark
Tel: 081 780 2222
£34.99

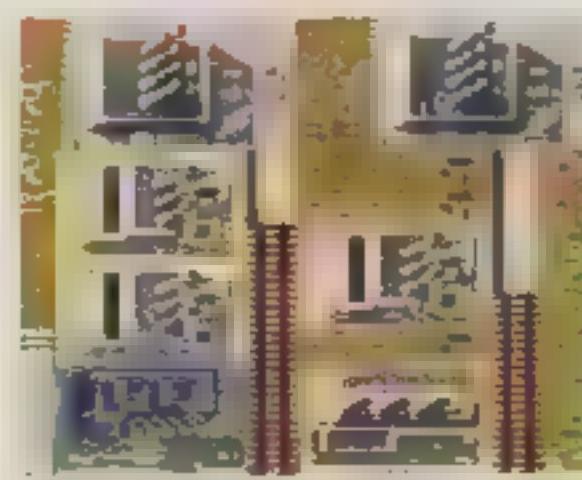


Flight sims come and flight sims go, but *MiG-29 Fulcrum* just can't be ignored. All the detail and authenticity of a real Soviet MiG-29 is coupled with riveting gameplay to provide a breath-taking ride through enemy skies. Treat it as a 'serious' simulator and practise your flight techniques, or ignore the techy stuff and blast hell out of the opposition on one of the five mis-

sions. Plane control is absolutely realistic, so learn to master this and you can fly the real thing - in theory, anyhow. Fast, smooth vector graphics help to sustain the illusion.

Graphics:	7
Sound:	7
Instant Appeal:	6
Lasting Interest:	9
Addictiveness:	9

Sim City
Infogrames
Tel: 071 7388199
£29.99



Sim City is the perfect pastime for when you're feeling megalomaniacal. You have complete control over the growth of a city, and every planning decision rests with you. By using icons to place zones, you gradually build your metropolis using residential blocks, commercial and industrial areas, roads, rails, stadiums and so on.

Keep the population happy - don't raise taxes too high, provide adequate facilities, and, with any skill, your town will boom.

Get it wrong and it'll soon be a ghost town. If you're feeling cocky you can even inflict a disaster such as an earthquake and then try to recover from it. An immensely absorbing game with almost infinite variations, marred only by the somewhat primitive graphics.

Graphics:	5
Sound:	1
Instant Appeal:	8
Lasting Interest:	10
Addictiveness:	9

Battle Command
Ocean
Tel: 061 832 6633
£24.99



Battle Command is the follow-up to *Carrier Command* and is in the same excellent league. Taking control of a Mauler tank, you can choose from 15 missions, each more difficult than the last, but all are extremely violent and involve you battling against the enemy. Various weapon systems are available for your use, such as the Banshee surface-to-surface missile and the Sleeper mine. Smoothly animated solid 3D graphics mean you're in there with the action and the challenge to complete every mission ensures high long-term interest.

Graphics:	9
Sound:	8
Instant Appeal:	8
Lasting Interest:	9
Addictiveness:	9

PUZZLES
The Light Corridor
Infogrames
Tel: 071 7388199
£24.99



The Light Corridor - a slight misnomer, methinks. What's the oldest video game in the world? *Pong*. And that's basically what *The Light Corridor* is about. Under your control you have a paddle with which you must bounce a ball down a long corridor, avoiding the obstacles along the way. It sounds simple but that's because it is. However, it's been programmed with typical Gallic flair. The graphics are simple but effective and scroll nicely, sound is kept to a functional minimum and the addictiveness quotient is very high. A simple idea executed with great style.

Graphics:	7
Sound:	7
Instant Appeal:	10
Lasting Interest:	8
Addictiveness:	9

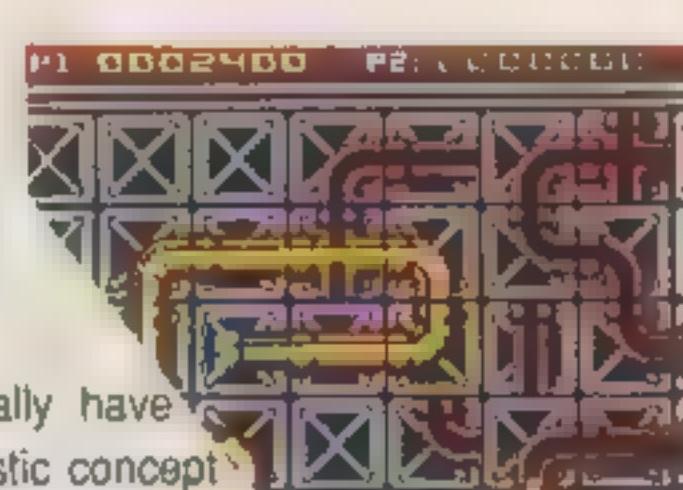
E-Motion
Accolade
Tel: 071 585 3308
£19.99



There are several candidates for the Weirdest Game trophy and this is one of them. In *E-Motion*, you take control of a floating craft which is controlled in a manner somewhat like the old Asteroids ship. Your mission is to make the balls that surround you disappear before they explode, by making them collide with another object of the same colour. Collide two balls of a different colour and they produce a new smaller ball. There are, of course, many other complications along the way. Impossible to describe but magic in action, *E-Motion* features some extremely attractive and colourful graphics which help enhance the surreal atmosphere of the whole game.

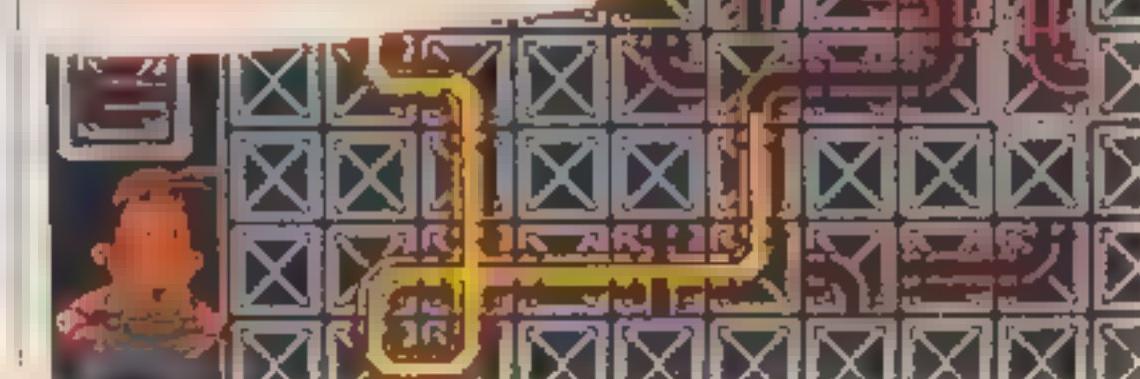
Graphics:	9
Sound:	8
Instant Appeal:	7
Lasting Interest:	9
Addictiveness:	9

Pipe Mania
Empire
Tel: 0268 541126
£19.99



Puzzle games usually have an extremely simplistic concept but maddeningly addictive gameplay. *Pipe Mania* is one of these. Pipe sections are given to you one by one from the dispenser. It's up to you to place these in the correct position on the screen to carry the Flooz liquid before it starts to flow from the starting point. The pieces aren't given in the correct order so you have to think several moves ahead to make sure the flow is uninterrupted. Bonus pieces and obstacles stop the game from becoming repetitive. One of the most addictive games ever produced.

Graphics:	8
Sound:	7
Instant Appeal:	9
Lasting Interest:	9
Addictiveness:	10



HART MICRO

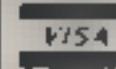
COMPUTER CONSUMABLE SPECIALIST

3.5 Bulk DS DD Disks	£0.34
3.5 Bulk HD Disks	£0.80
50 3.5 Disk Labels	£0.95
3.5 Disk Cleaner	£1.95
3.5 40 Cap Lockable Disk Box	£4.50
3.5 80 Cap Lockable Disk Box	£5.50
3.5 80 Cap Banx	£10.95
ST Replacement Mouse	£17.95
Mouse Mat	£2.95
Mouse Pocket	£2.45
4 Player Games Lead	£4.95
Joy/Mouse ext Lead	£4.95
Joystick ext Lead	£4.95
Joystick Splitter Lead	£4.95
Monitor Plinth	£23.95
Seal 'N' Type Thru Keyboard cover	£12.95
Dust Cover	£3.95
Quick Shot Python	£9.99
Quick Shot Maverick	£13.99
Quick Shot Flightgrip	£7.99
Quick Shot Starfighter Remote Control	£32.99

* ALL PRICES INCLUDE VAT, POSTAGE & PACKING *

11 Stonald Avo, Whittlesey, Peterborough,

Sales Hotline: (0733) 350242



ATARI ST ★ ATARI ST ★ ATARI ST ★ ATARI ST ★ ATARI
A brilliant offer for readers of New Computer Express!

Devpac ST 2

FROM HISoft ONLY £44.95

Devpac ST Version 2 is widely regarded as the most powerful assembly language development system for the Atari ST. It incorporates a debugger, stand-alone assembler and a fast linker.

IT INCLUDES:

- **GenST** Assembler is a high-performance, full-featured, two-pass Motorola standard macro assembler at up to 75,000 lines per minute. It has multiple modules and sections, repeat loops and macro calls that maybe nested as deeply as memory allows.
- **MonST** Debugger is an advanced symbolic monitor, debugger and disassembler. Now in addition it can offer Multiple window display, full expression evaluator, up to 22 significant characters in symbols, viewing of source files and conditional breakpoints.
- **Example Files** of a wide variety including a full GEM type windowing application and an example desk accessory.

The package comes complete with an extensive ring-bound manual plus notes on the various operating system levels and debugging strategies.

Order now by phone from the NCE mail order service or send the coupon to our FREEPOST address.

HOTLINE NUMBER 0458 74011



Your computer is
the only teacher
which YOU CONTROL!

Whatever your age, whatever your subject
- let your computer help you learn.

Subjects include ...

French, German, Spanish, Italian, English
History, Geography, Science, General Knowledge,
Football, First Aid, Sport, England, Scotland,
Natural History, Junior Spelling and Arithmetic

Available for most popular
home & business computers

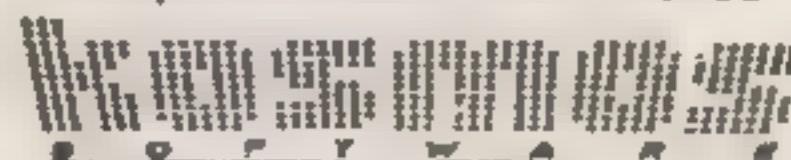


Kosmos are specialist producers of Educational Software designed to help you enjoy learning from your computer. Our programs even allow you to add your own lesson material.

Write or telephone for a FREE 20-page BROCHURE
of our Educational & Leisure software
Please state your computer type

Kosmos Software Ltd, FREEPOST (no stamp needed)

DUNSTABLE, Beds. LU5 6BR
Telephone 05255 3942 or 5406



Devpac ST 2

version 2
Complete Assembler/Debugger System
for the Atari ST Computers

**SAVE
£15**

**Yes, I would like to order a copy of
Devpac ST 2**

Name _____

Address _____

Tel No _____

I would like to pay by Access Visa
Cheque PO

Please debit my credit card
No. _____

Expiry Date _____

Tel. No _____

Send & make cheques payable to
Future Publishing, FREEPOST, The Old
Barn, SOMERTON, Somerset. TA11 7BR

"ANYONE WHO IS STUPID..."

The ST Pad and the ST Book. Two new pieces of hardware. We have been told that it is 'vapourware'. That we are not going to be seeing them in this country for at least two years.

Two years is the top end of the timescale. I hope we will see them within the next 18 months in the UK. 'Vapourware' is an interesting idea. Atari is sensitive to the fact that it has previously shown products long before they were due to be released. It has suffered from over-promoting release dates. Obviously we are keen not to repeat such mistakes.

As I say 18 months is the time frame I have set and would like to see them in the UK. Obviously there's a lot that can happen between a product being shown at the first time at a show, and the final specification factory built machines coming out.

18 months is a long way off. Is there any idea of price point for the Pad or the Book?

No. None at all. All I'd say on that is that everything we launch we try and launch, at a price advantage. It's almost an Atari trade mark that it brings technology to people at less of a price than maybe they would expect had they gone elsewhere.

Are there any details on the ST Pad aside from the fact that it's keyboardless.

It is difficult to explain, it is literally a keyboardless pad. It's almost like one of the old Etch-A-Sketch machines you used to see. It has the standard portable-type screen with a GEM interface. Its light-pen can double as a mouse. It really is just like half one of the current portables. It has no keyboard input at all.

The Pad heralds the death of the Stacy, would that be valid?

The Pad is seen as a replacement to the Stacy when it is actually launched.

So who are the notebooks aimed at?

Obviously, one of the biggest areas is people who are scared of using computers at the moment. Research has shown that the biggest single contribution to the techno-fear surrounding computers is the keyboard. It's the "Well I can't type" syndrome. A pen is something that everyone knows how to use, it's second nature. The other area is those people who are interested in the new technology and are just looking for the latest applications. Some of the applications that can be written for a light-pen and a smart screen envi-

ronment could quite change some of the applications we've got at the moment.

This popularisation also leads us quite neatly into your new Family Curriculum package.

Well the Family Curriculum is the first pack that Atari has launched since adopting a strategy that concentrates more on computing applications for the ST as opposed to a game playing machine that also can do a bit of computing.

Central to the way we are going to be marketing and promoting the ST range this year, and by this I mean everything from the 520 ST through to the TT is that they are very good, very versatile, very powerful computers. They happen at the moment to have the majority of their usage in the games arena. Over time we see that arena threatened by primarily by 16-bit consoles. And what we've got to do is get a positioning for the 16-bit computers that says "This is why you should spend an extra £100, £150 on a computer". It's not just so that your teenage son can play games, by all means he can do that, but he can also develop into the world of computers. He can learn about word processing, desktop publishing, music, creativity programming.

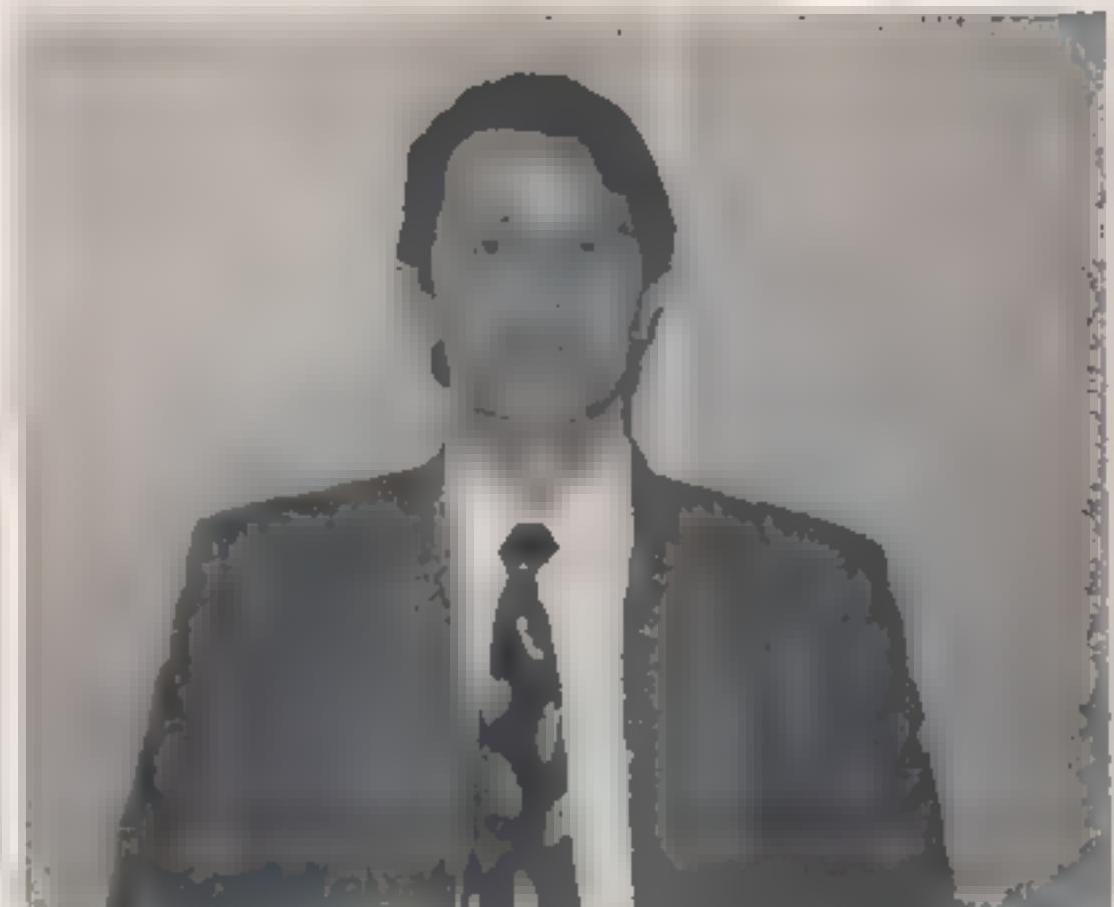
With the Family Curriculum we've developed a pack that is definitely a non-game pack. There isn't a

".... rather than saying that Apple is now competing with Atari, in some cases Atari is now seriously competing with Apple"

single game there. What we are trying to do there is position it as a family pack not just for the adolescent male child who will put it in his room, rig it up to his television or monitor and that will be the end of that. It should be expected as part of the family furniture if you like. It is a family property.

Does the Family Curriculum mean that Atari is abandoning its games playing user base?

Anyone who thinks that we're moving away from the games market for any reason other than the long term benefit of the ST is totally wrong. Although we're moving in perceptual terms away from a games focus, we



Peter Staddon, Atari's marketing manager speaks out....

are not ignoring games usage because 70 per cent of our usage is with kids playing games. We are not going to ignore that 70 per cent. We are going to make sure that it's still catered for, that games are still developed for the ST, that we do products, and this applies particularly to the Turbo Pack, that are a games action pack - and that's still 50 quid cheaper than the Amiga. So, although we are changing emphasis, games are still important to us.

Doesn't this change in attitude imply that the ST has been wrongly positioned or marketed badly previously?

I think that it is difficult to say that a machine which has grown so dramatically over the last five year period has been handled badly. There have been reasons why it has been positioned as a children's leisure, games machine over the last couple of years, and the growth we've achieved by pursuing that route has given us a very strong position in the UK market now.

No position is ever set in stone for decades on end. What we're doing now is recognising that the market place is changing and we are changing our position and our marketing emphasis behind the ST to reflect that and to reflect where we believe our strengths will be, not just this year but in the next five years. So we're looking forward with this positioning. And what we're doing is moving to where we want to be before we have to get there.

Atari is moving with a market which is evolving away from games?

I think there will be increased segmentation between games playing with the rise of the 16-bit consoles from just about every major manufacturer, including Atari. The market will continue to diverge, and as price drives down consoles we have to see a stronger position for computers and computing benefits within the UK mar-

IGNORES ATARI IS

So says Atari's marketing manager, Peter Staddon. We talked to him about the new notebooks, the Family Curriculum package and the STFM. Along the way we took in Commodore, the Lynx, Atari's strategy for the next five years, and the future of the STE.

ket. That's why packs like the Family Curriculum are starting to make their way in the market and, from Atari's point of view will be the focus of our marketing activity this year.

The STE will be the focus. So what's the future for the STFM?

It's a machine with a lot of history within Atari and the marketplace. It has been phenomenally successful for us. No matter how successful the past has been you've always got to look forward.

Having said that, we are in to such a strong demand for the FM product that will continue to [redacted] on sale. I will surprised if it isn't still available up, probably to Christmas. It's not out of the question to say that the STFM could still be on sale [redacted] Christmas 1992 if there is sufficient demand.

Could you conceive of a point in the next year when we have an STE Discovery pack?

The basic answer is yes. With the STE it would make sense to have a product similar to the Discovery pack that promotes the same level of learning and fun. That would obviously have to be below the 1040 pack.

Can you say when that might that be and how much it will cost?

No. I don't think we've settled on any price point yet. The price point from May of the 520 STE is £349 and obviously we are very keen to see how people react to that. We're not into cutting the price of our machines for the sake of it.

Now onto the competition. Is the Amiga a serious threat and where else do you see competitors?

Obviously the Amiga is Atari's single biggest competitor, that's a statement of fact. Within the music environment, the situation is more complicated – you have the Mac, you also have a lot of PC MIDI products, and the Amiga is starting to creep in around the edges but Atari [redacted] still dominant within there. The challenge we've got is to make sure that we keep our market share within that arena. When you've got 70 per cent of the market it's easy to take your eye off the ball and loose 5 or 6 per cent.

Within DTP, obviously Apple is very, very strong and rather than say Apple is now competing with the Atari, in some cases Atari is now seriously competing with Apple.

When you look at products like the Mega STE and the TT, and you look at the performance that they can

deliver and you look at the software which is beginning to be developed – you've had Calamus for a while, word processors like Caligrapher, image processors like the Retouch Professional package, these types of programs do give these machines an extra credibility.

If people are not concerned about buying badges or perceived brands, and they just look at the specifications of this machine versus that machine, every time they would go for an Atari.

A lot of people at the moment are thrown towards Apple because it [redacted] seen as a more serious computing brand – hence our desire to move away from games and into the more serious arena.

Talking of badges and brand names. Commodore has already said this year that Atari is not competition. How do you react to this?

It's wrong to say that we don't care what other people are doing because that would comply and arrogance.

"...any mistakes we've made we've learnt from, we're very good at learning from mistakes. I'm looking forward not back."

What we are doing is we are concentrating on what Atari UK and Atari Corp want to achieve. Within that we have to recognise the competitive environment we are operating in. Not only from Commodore but also from Acorn, Apple, PCs and so on. What we're trying to focus on [redacted] getting what we want to do right and following our agenda rather than following an agenda which has been whipped up either by one of our competitors in which case we are rather than leading or by a trade or industry whirlwind.

I was interested to read those remarks. I think they betray a fundamental misunderstanding of what a brand actually is. Brands take a lot of money to create, and the Amiga has been a brand for a long time. But there are good brands and bad brands. The Amiga's success over the last year or so has shown that it has been handled well within its market place and market segment.

The ST's success over the same period has shown that, within the market segments we want to address we are recognised as a strong brand and we are recognised as a successful brand.

So I really think that although some of the remarks about brands were irrelevant, some of what was said about prices and bundles is old news, that's 18 months ago. I'm happy for them to be looking back at mistakes we made 18 months ago because hopefully that means that not looking at what we're doing now. And any mistakes we've made, we've learnt from, and we're very good at learning from mistakes. I'm looking forward not back. What the competition says interests me but won't necessarily affect what I want to do, won't effect my agenda. I know what I want to do, I know where I want Atari to be in 5 years time and I know what I have to do to achieve that.

There are rumours of some large software houses not bothering to develop games for the ST.

All the developers that I've talked to, and all of those that our software support people have talked to are committed to developing for 16-bit computers, both the Amiga and ST. At the moment a few software houses are talking about the Amiga as a generic 16-bit machine because they may perceive it as sexier. However they are as aware as anyone about the dangers and the fashion nature of this market, and that Amiga image could be blown over in a fraction of the time it took to build up. So people are not necessarily committed to building software for one 16-bit format.

Anyone who ignores Atari within the 16-bit market is stupid because of the installed user base, the worldwide sales, the volume sales we've got. We've certainly had no feedback from any software house not supporting the ST. What we're getting [redacted] people committed to developing 16-bit games primarily on consoles, and then porting them on the Amiga, or the ST and the Amiga. We have a number of developers working very closely with us on some major projects which I can't talk about at the moment.

Finally, are there any plans for CD-based STs

Obviously we don't want to be the guys who launch the Betamax version of the CD computer. The developments between the likes of Philips and Sony to develop [redacted] CD standard are quite awesome. So we will wait for a standard to be developed. CD technology is not new to Atari, and not something it would take us very long to kick in once we have the final details. We don't have a product now that I can say this [redacted] our CD-interactive player, disk drive whatever, but given the amount of development work that Atari has already put into this area it will take us very little time to fine tune to hardware or the software.

Thank you for your time

VISITING THE WHOLE FAMILY

These days Atari is stressing that the ST is part of a range of computers, rather than a stand-alone games machine. So which one should you buy? Alan Fitch examines the portfolio of products in the ST family.

THE 520 ST DISCOVERY PACK

As its name suggests, the Discovery Pack is intended to be the entry point to the ST range, and it's aimed at first-time users – you get all that's needed to start computing with the ST and begin what Atari hopes will be a long relationship with the whole range of STs.

Hardware

Apart from a 520K STFM with 1Mb disk drive, you get a TV modulator that allows the computer to be used with any domestic television set, and eight pieces of software – one of which is an interactive tutorial program that takes the novice user through the ST's facilities step-by-step.

Software

On the pure entertainment side, there's *Carrier Command* – an original strategy game that offers 3D graphics – complemented by a trio of fast 'n' furious conversions from the world of coin-operated arcade machines: *Outrun*, *Space Harrier* and *Bombjack*.

All you need to do is buy a joystick for five or ten pounds, and thrills and spills can be yours.

For the more seriously inclined, there's *Neochrome*, a complete art and graphics package that allows some stunning computer images to be created and edited, *FirST BASIC* which should prove a useful introduction to the world of programming, and *S.T.O.S.* – the core module of a suite of programs that together build into a comprehensive games-creation utility.

Price: £299.99 including VAT



THE 520 STE TURBO PACK

The next step up the ST ladder is represented by the Turbo Pack – which costs £50 more than the basic, entry level bundle and contains a more powerful version of the basic ST computer – the 520K STE, which offers enhanced sound and graphics capabilities as compared to the entry-level machine.

Hardware

The STE is an all-round better machine than the STFM. For a start, the operating system has been upgraded and allows disks to be formatted in the MS-DOS format used by IBM PC compatible machines, and disk loading and saving operations are much faster.

Then there's a palette of 4096 colours rather than the 512 colour palette found on the STFM, and sound is handled by two extra chips that relieve the central processor of the job of handling sound output, freeing processor time for core tasks like running your program! You get a TV modulator, so there's no need to splash out on a monitor...

Software

On the serious side, *FirST BASIC* and *S.T.O.S.* are still included, but *Neochrome* is replaced by *Hyperpaint 2*, a more powerful graphics package that takes full advantage of the STE's expanded palette. In place of the beginner's tutorial program, there's a music utility – *Music Maker 2* – that should set budding musicians firmly on the road to computerised stardom.

What's more, the Turbo Pack contains a veritable compendium of eight action games – as well as the all-



• Left: the foundation of the ST range – the STFM
• Above: the entry-level bundle, the Discovery Pack. Aimed firmly at the novice computer user, it contains all you need to get up and running

important joystick that helps you get the most out of them – no need to spend extra money here!

As advertising copywriters would have it, 'there's hours of fun ahead of you' as you play *Indiana Jones and the Last Crusade*, *Dragon's Breath*, *Anarchy*, *Blood Money*, *Impossible Mission II*, *Human Killing Machine*, *Super Cycle* and *Outrun*.

Price: £349.99 including VAT

THE 1040 ST 'FAMILY CURRICULUM' PACK

The third 'all-in-one-box' get you going' ST bundle was only launched by Atari three weeks ago to move the emphasis in ST bundles away from games towards a package that is firmly aimed at providing value for every member of the family.

Hardware

The 1040 is still an STE – so it offers much improved sound and graphics capabilities as compared to the basic ST – but it arrives with a full megabyte of memory, essential if you want to get the most out of serious software applications packages.

Software

Education is the main theme in Atari's new Family Curriculum pack: the five software modules included are designed to cater for the learning needs of everyone in the family – from pre-school children through people revising for GCSEs to university undergraduates.

Module 1 caters for pre-school children who are learning to read and write. Module 2 is targeted at junior-school children who need to practice maths and spelling, while Module 3 is for students who need to revise for GCSE exams. Module 4 contains the 'creative' applications featured in the Turbo Pack – *Hyperpaint*, *Music Maker 2* and *FirST BASIC*, and for the home office or small business there's Module 5 that includes a word processor, database and spreadsheet.

There's nothing for the would-be joystick wielder, however – if it's games you're after, you'll need to nip down to the shops...

Price: £399.99 including VAT

THE MEGA STE RANGE

A trio of machines occupy the middle ground in the ST family – the Mega STEs, which offer a wider range of expansion options. Aimed at the small business or really serious home user, the Mega machines offer much more computing power.

Hardware

Ideal for running memory-intensive applications, the Mega series STEs run at 16MHz – twice the speed of the STFM and STE – but can also be switched to 8MHz in order to run software written for the first-level ST computers.

The Mega STE 1, Mega STE 2 and Mega STE 4 all come complete with ■ high-resolution mono monitor, and feature a detachable keyboard, which is more usual in the world of serious desktop computers where heavy use is made of the keyboard.

The Mega 1 arrives with 1Mb of memory installed, while the Mega 2 is fitted with 2Mb. The Mega 4 comes out of its box with 4Mb of memory in place. For those who want to have a large amount of data permanently on-line, the Mega 2 and Mega 4 also feature a 50Mb hard disk drive as standard, as well as the 1Mb floppy found on all STs.

Software

The Mega series machines are sold as stand-alone computers – you get the operating system, but will need to buy your own applications.

Prices:

Mega STE 1	£689 (inc 15% VAT)
Mega STE 2	£1,034 (inc 15% VAT)
Mega STE 4	£1,149 (inc 15% VAT)



* The Mega STE 4 – offers power for the more serious ST user.

THE TT WORKSTATION RANGE

Three machines sit right at the top of the ST range, and are not so much personal computers as personal workstations sold at personal computer prices. Nevertheless, they are still part of the ST upgrade path, and are based on the ST standard.

Hardware

Designed around the 68030 32-bit central processor, the TT machines can run ■ up to 32MHz and offer blistering speed advantages when memory-intensive

applications are run – the kind of speed a real power user calls for.

Supplied complete with a high-resolution colour monitor and a 50Mb hard disk, the TT machines offer six built-in screen resolutions including a very high-resolution mono mode that offers a 1280 x 960 display. Four colour resolutions are supported, using a palette of up to 4096 colours.

On-board memory can be expanded to 26Mb, but the TT 02 arrives with 2Mb installed, the TT 04 has 4Mb and the TT 08 features 8Mb of memory. To facilitate the installation of UNIX, a range of hard disks is available, allowing units of up to 600Mb capacity to be added.

Software

The TT series machines are sold as stand-alone, high-end computers – you get the operating system, but will need to buy your own applications.

Prices:

TT 030/02	£2,294 (inc 15% VAT)
TT 030/04	£2,524 (inc 15% VAT)
TT 030/08	£2,754 (inc 15% VAT)



* For real power users – the TT workstation tops the ST range.

THE STACY LAPTOPS

Atari seems to like doing things in threes, and its range of ST-based portables for ST users on the move is no exception. Called the Stacy, the laptop version of the ST is aimed at the more serious user – and has particular relevance to the travelling musician, as the standard ST MIDI interface is included.

Hardware

Display is achieved on a Supertwist LCD screen, and all three configurations include an internal hard disk drive. Stacy can be purchased with 2Mb of RAM and either a 20Mb or 40Mb hard drive, or as a machine with 4Mb of RAM and a 40Mb hard drive.

While the Stacy is described as a laptop, you'd need strong knees for sustained use – it's more of a portable desktop computer.

Software

The Stacy is sold as a stand-alone portable – you get the operating system, but will need to buy your own applications.

Prices:

2Mb/20Mb	£1379.99 (inc 15% VAT)
2Mb/40Mb	£1609.99 (inc 15% VAT)
4Mb/40Mb	£2069.99 (inc 15% VAT)

NEW ADDITIONS TO THE ST FAMILY

At the CeBIT computer fair in Hannover, Atari unveiled two new portable machines which are scheduled to be available this summer, and a new CD-ROM drive that is compatible with the STE and TT series of machines.

Atari is clearly looking at the latest technologies and incorporating them into the ST range, as these three products demonstrate...



The ST Book: a much lighter version of the Stacy portable, it takes the form of a thin notebook computer with 1Mb of RAM (upgradeable to 4Mb) and an internal 20Mb hard drive.

Price: £1,500



The ST Pad: a keyboardless notepad that has a pen-sensitive screen. It uses sophisticated algorithms to recognise the user's handwriting.

Price: £2,500



Atari's CDAR505 CD-ROM drive – a much more compact unit than its predecessor.

Price: £399.99

HARD SOFTWARE

Alex Soboslay concludes his assessment of the very best in ST software. Nominations are in the categories: Miscellaneous, Computer Aided Design and Word Processing. Find out the winners here.

MISCELLANEOUS

Knife ST.
£29.95
Hisoft
Tel: 0525 718181.

Want some *really* useful software? You don't really need route planners, calculators or clocks on your computer, but you *will* someday need this complete disk management package combining three utilities: disk sector editor, file recovery program and formatter. Imagine you've accidentally deleted a file or lost data through a crash or power fluctuation. *Knife ST* enables you to hunt down where a deleted file has got to and recover it, as well as probe the innermost technical secrets of your disks – it even displays intelligible File Allocation Tables or shows the clusters that belong to a specified file so you can reconstruct deleted or damaged disk sectors.

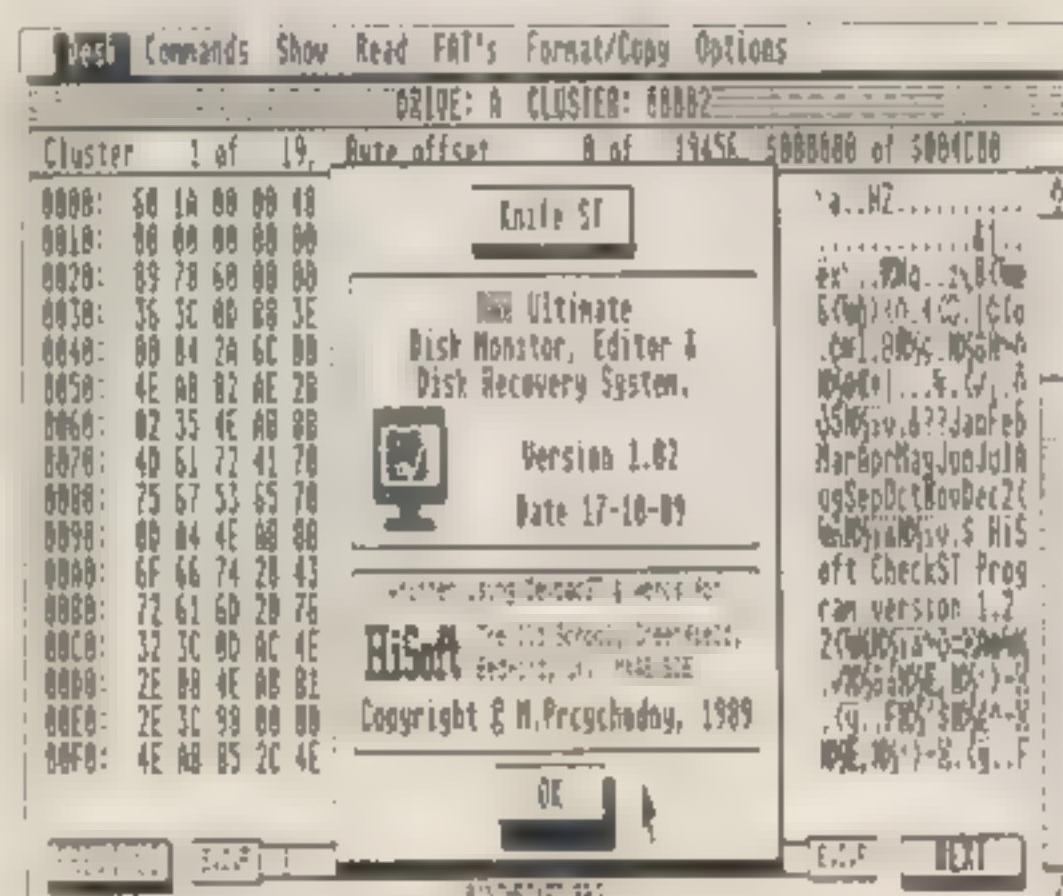
It performs a myriad of technical wonders, from loading a specified sector or track, reading a single track regardless of its format and displaying gaps, ID and data addresses, to loading an entire file into memory very rapidly and editing it. *Knife ST* is also the most powerful disk formatter for the ST, enabling you to format to ST or PC spec or create your own format with any number of tracks and variable sector size.

It comes with a comprehensive manual, so even if you know only a little about disk structures you can perform miracles. (If you want to know more, incidentally, don't miss the forthcoming special feature on recovering lost data in *ST Format22*.) Once you know what you're about, it's remarkably easy to use – options are selectable by keystrokes or mouse. Though many other programs, even in the Public Domain, can perform many of the same functions, the combination of features is simply unbeatable.

For the less technically-inclined, how about a Public Domain utility that enables you to grab an image from any part of the screen and save it as an .IMG, Degas or .NEO format file so you can use it in your DTP package? *Snapshot* does just that – and it's just a few quid from your local PD library or free on *ST FormatCover Disk 19*.

How about *FastCopy* – a PD Desk Accessory that enables you to copy whole disks at lightning speed, format a new disk as it copies and even check for viruses in the process?

CAD



GFA Draft Plus 3
£99.95
GFA Data Media
Tel: 0734 794941.

For a Computer-Aided Design package, this is exceptional value for money – it's useable on a low spec ST, but has enough features for full professional use. It comes with an extensive manual and is easy to use, a column of icons to the left of the screen giving you

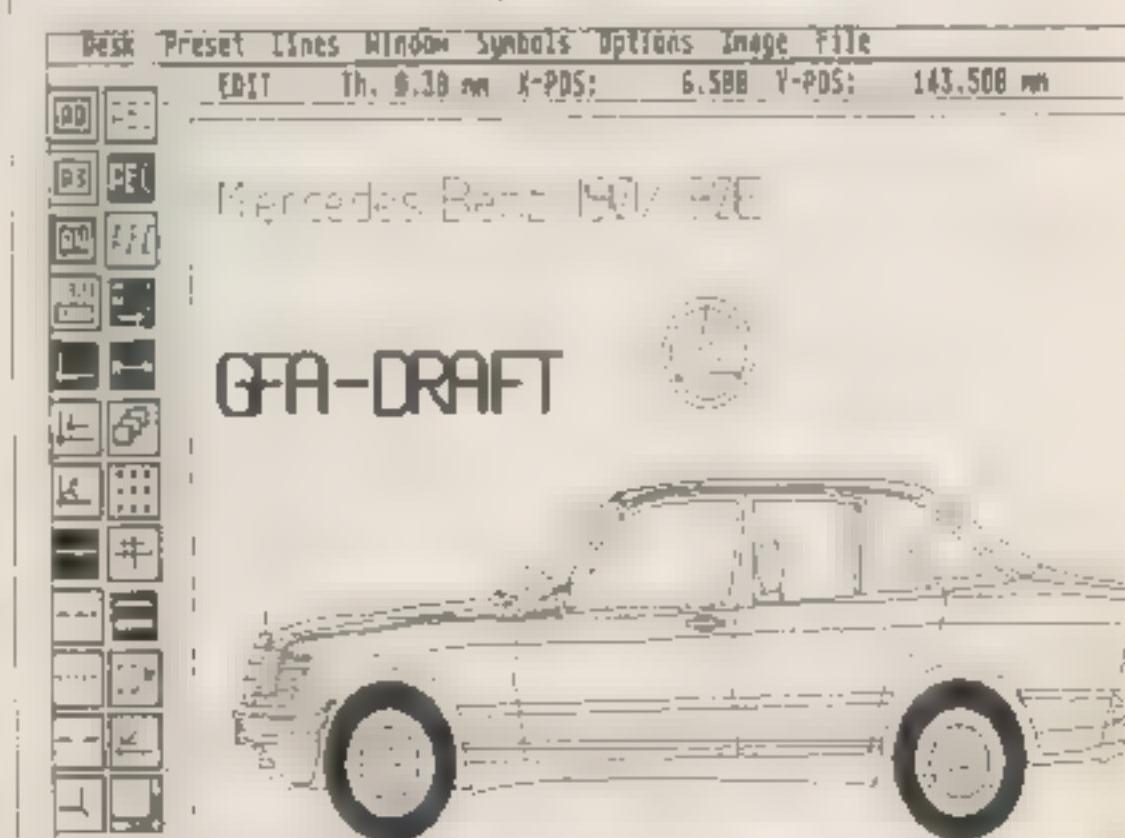
easy access to the 24 most-used features. This means you can select or de-select each mode or tool by clicking with the mouse as well as via the more usual drop-down menus.

For more room on the screen, you can switch out the icons simply by pressing the Tab key, then press it again to return them to view. The program works with a colour monitor in medium resolution or mono monitor in high res, and gives you a work area up to 1,365 mm square, around which you can scroll with GEM scroll bars, and you can zoom in using several user-variable magnifications.

You draw lines or geometric shapes simply by clicking and dragging with the mouse; all shapes are rubber-banded for easy manipulation and modification. Text can be entered in various styles and sizes. A library of over 100 symbols is included, plus you can design your own and assign them to function keys for easy recall.

Limitations? As with nearly any piece of software, no matter how good, there are always improvements that can be made. In this case, the downsides are not vast: the program draws in two dimensions only (although GFA is working on a 3D program which is planned to be compatible), and redrawing of complex designs can take some time.

However, on the positive side once again, the program can read in Hewlett Packard Graphic Language commands as well as GFA BASIC. It is also capable of supporting DXF data format files, and this means that if required, you can export your hard worked designs to other computers and systems. You can even use them in other software packages.



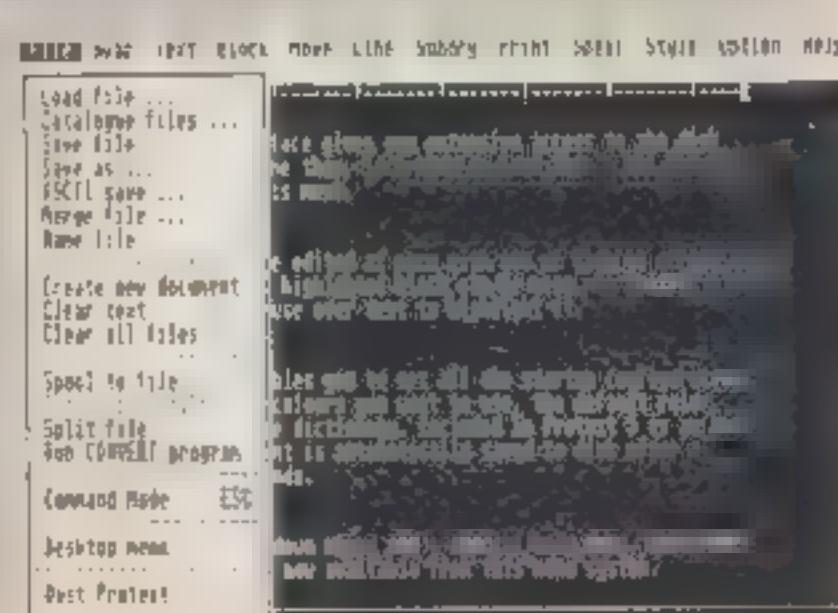
WORD PROCESSING

Protext 5
£149.95 (update from v4.2 £60)
Arnor
Tel: 0733 68909

This powerful word processor has an exhaustive range of features, easily configurable to your precise needs: on installation, you run a CONFIG program to set ruler sizes, page lengths, margins, etc – and also help bars, what colours you want displayed text in, which dictionary and which printer driver to use, and how often to auto-save. All commands are available as keystrokes, and these are also fully redefinable in CONFIG. The program gives you unrivalled editing control – for example, you can move the cursor by any increment you choose: by character, word, line,

paragraph, screen, page or document. Macros are available, and you can store up to 80 commands; there are all the usual WP features, including a very fast word count function. There is even a line drawing mode which intelligently inserts junctions and crossovers as you draw boxes with the cursor. Version 5 adds impeccable drop-down menus in addition to previous versions' command line interface (type-in commands), a new faster spelling checker which features a 120,000 word Collins dictionary, and a new disk interface which enables you to load, erase or rename files from directory.

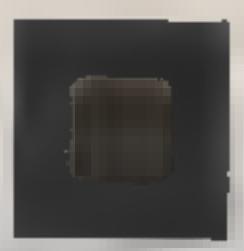
A dazzling 36 documents can now be held in memory simultaneously, easily accessible through a drop-down menu system, with two on-screen at once. *Protext* is certainly expensive for most people, but worth it for power and features. 1Mb is recommended.





KAO MF2DD

1Mb capacity



OPENING HOURS
Mon-Fri 9.30am-
7.00pm
Sat 9.30am-6.00pm
Sun 10.00am-3pm

THE WORLD'S FINEST DISKS FROM T.D.K & KAO SERIOUS QUALITY FOR SERIOUS USERS

BRANDED BOXED IN 10's WITH LABELS KAO TDK
3.5" MF2DD 135 Ipi DS/DD £8.00 £8.00
3.5" MF2HD 135 Ipi DS/DD £15.00 £18.00
5.25" MD2DD 96 Ipi DS/DD £5.00 £8.00
5.25" MD2HD 96 Ipi DS/DD £8.00 £10.00

KAO DISKAROO DISK WALLET CONTAINING 2 3.5" & 1 5.25" MF2DD DISKS £10.00

1 MEGABYTE 3.5" MF2DD BULK 50p each or £24.00 £48.00
2 MEGABYTE 3.5" MF2HD BULK 75p each or £35.00 £68.00

KAO MF2DD BULK DISCS 8 COLOUR: BLUE, GREY, RED, YELLOW, GREEN, BLACK, ORANGE, FOG WHITE

NEW LOW PRICES

(PURCHASERS OF 100+ DISKS: WE WILL INCLUDE A FREE 3.5" DISK DRIVE CLEANING KIT)

All above disks are 100% error free & warranted free from defects & as such carry a 1 year guarantee.

POSSO BOX 11 45.25" ONLY £14.00 EACH.

DISK BOXES 3.5" 40 cap C4, 135 80 Cap E5, 5.25" 50 cap G4, 5.25" 100 Cap H5, 100 Cap S5

STAR PRINTERS LC-10 Mono £150, LC-200 Colour £210, LC-24-200 £255, LC-24-200C £295

HP DESK JET 500 ONLY £495. - All include FREE IBM printer lead.

NB All prices inc. VAT with FREE postage & packing on orders over £50.00. Overnight delivery £3.00 extra.

K.C. VIDEO, 6 & 8 DONCASTER ROAD, SOUTH ELMSALL NR. PONTEFRACT, WEST YORKS, WF9 2YZ

TEL: (0977) 649100 FAX: (0977) 643312



TCB TRACKER

"MUSIC SOFTWARE OF THE YEAR" STF

ST VERSION
ONLY

£15.00



10 Chandlers Court, Eaton
Norwich, NR4 6EY
Telephone:
0603 503382



The ST Club

49 Stoney Street - Nottingham - NG1 1LX - (0602) 410241

ST Applications

ST Applications is a complete re-design of the ST Club Newsletter that has grown to 4,500 paid-up subscribers since we started publishing it over four years ago. Each monthly issue runs to 60 A4-pages and is packed full of high quality reading for ST users. If you would like to subscribe or receive an evaluation copy please complete the order form below.

UIS III

Powerful replacement for the Atari Item Selector. Universal Item Selector III incorporates a host of utility functions: format disks, copy, move and rename files and folders, print disk directories, create folders, find files, set file paths, six directory view options, set file attributes, access any drive, display free ram and disk space. These facilities are all available from within applications which give access to the Item Selector or the accessory menu. "You'll wonder how you ever lived without it", ST Format, December 1990. Price £19.95.

The Catalogue

Our collection of PD and Shareware disks runs to over 2,000 disks and we guarantee same day dispatch on all orders. Our Free Catalogue - (48 pages A4) details these disks and all of our products and services: PD disks, Books, Budgie UK Licenseware products, Accessories and Laser Printing service. We also publish: Universal Item Selector III (£19.95), The Astronomy Lab (£19.95), Key Master (£6.95), Oxford Chess (£9.95), Molgraph (£12.95), Users' Guide to Timeworks Desktop Publisher (£9.95), Users' Guide to 1st Word (£6.95), Fontpac Plus Gem and Signum Fonts (from £6.95). Details of these products will be found in our current catalogue. Write or telephone for your copy today.

Please send me:

- 12 issues of ST Applications (£15)
- Sample copy of ST Applications (£2)
- A free copy of the ST Club catalogue

From:

Cheque/PO made payable to the ST Club for £ enclosed

Your guarantee: If at any time you want to cancel your subscription you may do so simply by writing to us. The balance of your subscription will be refunded in full.



ATARI ST BOOKLIST

3D Graphics Programming	Abores 18.45
6800 Assembly Lang. Prog.	Mitrow 19.95
Applications Guide in C	Compute 19.45
ST Basic Sourcebook & Tutorial	Abores 9.50
Disk Drives Inside and Out	Abores 18.45
From ST Basic to C	Abores 17.95
Game Makers Manual	Sigma 12.45
GFA Basic Development + disk	Glen 17.95
First Word + New v3	ZZSoft 19.95
Introducing ST Machine Code	ZZsoft 21.00
Midi & Sound Book	M&T 16.25
Programming the 6800	Sybase 23.95
Presenting the Atari ST	Abores 15.95
Get The Most From Your ST	Fut.Pub 9.95
ST Machine Language	Abores 16.10
Tech Reference Guide vol 1	Compute 19.45
Tech Reference Guide vol 2	Compute 19.45
Tech Reference Guide vol 3	Compute 22.45
Tricks & Tips on the ST	Abores 16.40
Your FIRST BASIC	Bookmark 14.45
Your Second Manual to the ST	14.95

MISC ITEMS

DATAstream Pro. AT25 3 Other Modes	100-400 64 Grey Scales	189.95
Commodore Handi Scanner 3 scan modes	200-400 DPI 16 grey tones	144.95
Golden Image Hand Scanner 3 grey modes	200-400dpi Touch Up s/w	189.95
Vidist video frame grabber-Rombo	84.95	
Vidi Chrome Colour Upgrade	18.50	
Atelco PC26 Emulator V5	179.95	
Twin joystick/mouse lead	5.95	
13 pin open ended lead	8.50	
Naksha mouse + House & Mat	33.95	
Universal Printer Stand - Plastic	9.95	
Dust Cover ST520/1040	5.25	
QuickJoy Infrared Joystick	28.95	

All prices include VAT. Carriage FREE UK & BFPO: EEC £6

Please send Cheque/PO made payable to:

RHS, Ramara House, 22 Grange Road

Staincliffe, Nr. Batley, West Yorkshire. WF17 7AT

Telephone Sales 0924 473556

VISA Access Hours of business 10am-7pm Monday-Saturday

ATARI ST PROGRAMS

Accountant v3	Sage 124.95
Accountant Plus	Sage 219.45
Bookkeeper v3.2	Sage 82.95
C-Lab Notator V3	.457.35
Canvas	12.49
Cashbook Combo	Digits 55.95
Cyber Control	28.95
Cyber Dev/Design	Disks 15.95
Cyber Paint	38.95
Cyber Sculpt	55.95
Cyber Studio	38.95
Cyber Texture	34.45
Data Manager Prof	28.95
Degas Elite	19.95
Deluxe Paint	48.95
Devpac v2	Hisoft 43.95
From ST Basic to C	Digital 29.16
Easy Draw	36.75
Easy Text DTP	ZZSoft 19.95
First Word + New v3	*** 55.45
Flight Simulator	29.99
Fuji School 2 all ages	14.95
Fuji School 3 all ages	18.95
GFA Basic V3.5	*** 37.95
GFA Compiler v3.5	22.95
GFA Draft Plus V3.13	79.95
GFA Gem Utility	23.95
GFA Shell	16.95
GFA Mission Control	23.95
GFA Raytrace	29.95
Harden	Hisoft *** 36.45
Hisoft C Interpreter	36.95
Hisoft Fort	29.95
Home Accounts	Digital 19.95
K-Data	Kuma 36.45
K-Resource 2	Kuma 32.45
K-Rogot Thesaurus	35.95
K-Spread 1	Kuma 18.49
K-Spread 2	Kuma 18.49
K-Spread 3	Kuma 64.95
K-Spread 4	Kuma 87.95
Knife ST	Hisoft 22.45
Lattice C v5	Hisoft 109.95
Masterplan Spreadsheet	66.56
Master Sound 2	29.75
Megapaint II	79.95
NeoDesk 3	*** 28.55
Pagostream New Version	119.95
Personal Finance Man. Plus	31.98
High Speed Pascal	Hisoft 71.95
Prodota	Armor *** 58.95
Protex v5	Armor 108.95
Replay 8	83.95
Sequencer 1	71.95
Spectrum 512	22.95
Superbase Personal	18.95
Superbase Personal 2	68.95
Superbase Professional	168.95
System 3 Extra	Digital 58.95
Tempus	Hisoft 28.95

ATARI ST PROGRAMS

Timeworks DTP	*** 67.50
Timeworks Tutor	24.95
Turbo ST	Hisoft 28.45
Twist Switcher	Hisoft 20.21
Werks	Hisoft 21.45
Wordfair	Hisoft New 63.95
Word Perfect	175.95
Word Writer	Timeworks 39.95
*** SPECIAL OFFER ***	
Timeworks DTP & First Word V3	Only £98.99

ATARI ST MACHINES

520STE Turbo Pack	368.95
520 STFM Discovery Pack	274.99
1040 STE Extra/PRO2 Pack	439.99
Lynx + 8 games inc	
Electrocop	124.99
Portfolio Pocket PC	179.95

MONITORS

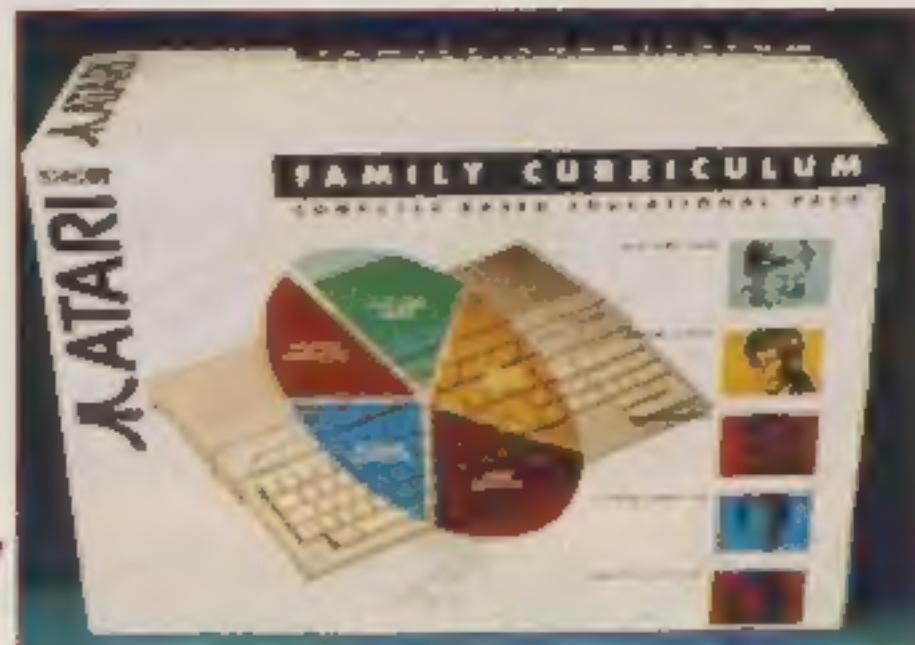
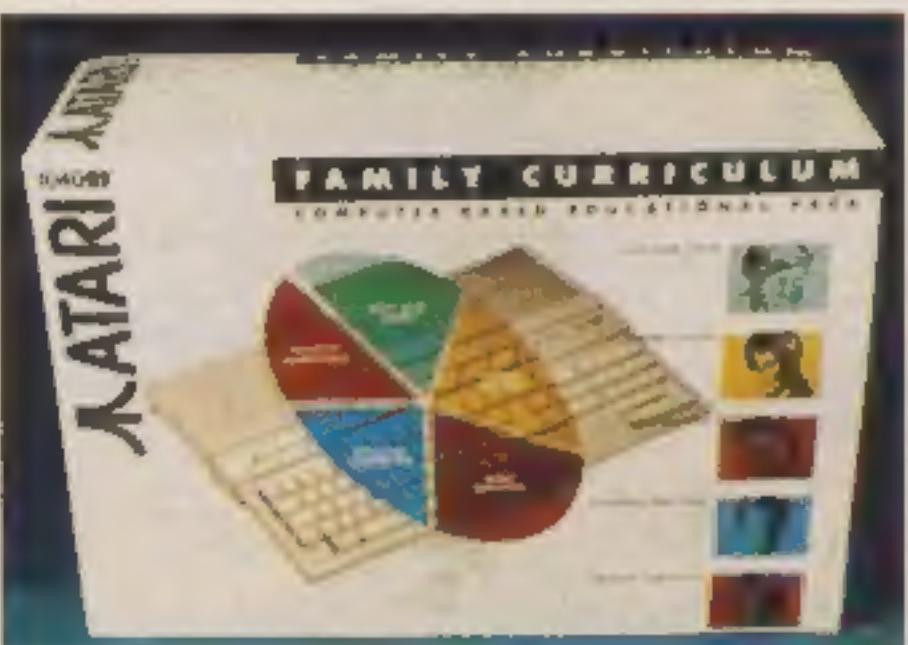
Atari SC1224 Colour	268.95
Alan SM 124 Mono	119.95
Philips CM8833 II Colour	
+ Lead	249.95
Monitor cable ST + scart	9.95

PRINTERS & ACC

WIN ! WIN!

£399

FAMILY CURRICULUM PACK



HOW TO WIN ATARI'S BRAND NEW STE PACK

Just five questions are all that lie between you and your very own Atari Family Curriculum package. But first, what's this pack all about then? Well, what you get is a 1040STE computer and a heap of software. To be specific, there are five modules which can be used by each member of the family, from the five year old primary school child all the way up to the parents. One module is even designed specifically to help you, or a friend, or a 'young adult' through the GCSE exams. Ready for the questions?

FAMILY CURRICULUM COMPETITION

Name _____

Address _____

1 ■ 2 ■ 3 ■
4 ■ 5 ■

1) Which singer fronted 'The Family Stone'. Was it?

- A) Harold Wilson
- B) Charles Mason
- C) Bobby Charlton
- D) Sly Stone

2) Tom Brown went to which school?

- A) Charterhouse
- B) Eton
- C) St Trinians
- D) Rugby

3) *We Are Family* was a hit for?

- A) Sister Sledge
- B) André Previn
- C) Claude Debussy
- D) Jimmy Hill

4) The world famous Sullivan family hailed from which part of the world?

- A) The Congo
- B) Ickleford
- C) Australia
- D) Norwich

5) The Royal Family's real name is not 'The Royal' at all it is....

- A) Tudor
- B) Jarvis
- C) Windsor
- D) Sprecklington-Mannerhouse-Dibbs

Now all you have to do to win the pack is answer the questions correctly. Fill in the form which you see at the bottom left of this page and send it, on the back if a postcard or sealed envelope to: The Family Curriculum Comp, *New Computer Express*, 29 Monmouth Street, Bath, Avon BA1 2BW. Closing date is Monday 15th April. The winner, being the first answer out of the hat, will be announced in our next supplement. Jolly good luck to you all!

WINNERS

The winners of the last two supplement's competitions would be waiting with baited breath if they only knew who they were.

First off is the lucky recipient of the Cheetah 5V Professional keyboard. The winner is

Gary Lodge of Liverpool. The prize will be heading your way from Cheetah HQ in Cardiff. Thanks once again go to Cheetah for its help in this.

Next we have the ten winners of *Powermonger* from those wonderful people at Electronic Arts. A big thank you goes to Sarah at EA for this.

The winners are: Harbans Singh, Sean Walsh, Neil Burrows, Filip Landuyt, Gary Fairclough, RA Jacob, Simon Taylor, W Stokes-Clarke, Ian Timson, D Holdstock, and last but not least, Steven Robinson. Prizes are in the post from us.

THE WORLD'S MOST POWERFUL FREEZER-UTILITY CARTRIDGE IS NOW EVEN BETTER

THE NEW MK II VERSION IS HERE!!



STILL ONLY
£59.99
POST FREE
FOR THE A500/1000

A2000 VERSION AVAILABLE

£69.99

PLEASE STATE WHICH COMPUTER YOU HAVE WHEN
ORDERING

AMIGA ACTION REPLAY SIMPLY PLUGS INTO THE EXPANSION PORT OF YOUR AMIGA AND GIVES
YOU THE POWER TO FREEZE MOST ANY PROGRAM, THEN YOU CAN...

JUST LOOK AT THE UNMATCHED RANGE OF FEATURES

• SAVE THE ENTIRE PROGRAM IN MEMORY TO DISK

Special compacting techniques enable up to 3 programs to fit on one disk. Now saves directly to disk as Amiga Dos - reloads independently of the cartridge - even transfer to hard drive! Works with up to 2 Megs of Ram - even 1 Meg Chip Mem (Fatter Agnus).

• UNIQUE INFINITE LIFE/TRAINER MODE - NOW MORE POWERFUL

Allows you to generate more and even infinite lives, fuel, ammo, etc. Perfect as a trainer mode to get you past that "impossible" level. Very easy to use.

• IMPROVED SPRITE EDITOR

The full Sprite Editor allows you to view/modify the whole sprite set including any "attached" sprites. RANGE OF IMPROVED FEATURES.

• VIRUS DETECTION

Comprehensive virus detection and removal features to protect your software investment. Works with all presently known viruses.

• SAVE PICTURES AND MUSIC TO DISK

Pictures and sound samples can be saved to disk. Files are saved directly IFF format suitable for use with all the major graphic and music packages. Samples are displayed as screen waveform.

• SLOW MOTION MODE

Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!

• RESTART THE PROGRAM

Simply press a key and the program will continue where you left off.

• FULL STATUS REPORTING

At the press of a key now you can view the Machine Status, including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.

• POWERFUL PICTURE EDITOR

Now you can manipulate and search for screens throughout memory. Over 50 commands to edit the picture plus unique on screen status

"overlay" shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!!

• MUSIC SOUND TRACKER

With Sound Tracker you can find the complete music in programs, demos, etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!!

• AUTOFIRE MANAGER

From the Action Replay II preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!

• DISKCODER

With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. Tagged disks will only reload when you enter the code. Very useful for security.

• PREFERENCES

Action Replay II now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.

• DISK MONITOR

Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.

• DOS COMMANDS

Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.

• DISK COPY

Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.

• BOOT SELECTOR

Either DF0 or DF1 can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

PLUS A MACHINE CODE FREEZER MONITOR WITH EVEN MORE POWER!!

EVEN MORE FEATURES INCLUDING 80 COLUMN DISPLAY AND 2 WAY SCROLLING:-

- Full M68000 Assembler/Disassembler
- Full screen editor
- Load Save block
- Write String to memory
- Jump to specific address
- Show Ram as text
- Show frozen picture
- Play resident sample
- Show and edit all CPU registers and flag
- Calculator
- Help command
- Disk handling
- ASCII, Assembler, Decimal
- Copper Assemble/Disassemble - now with suffix names
- Dynamic Breakpoint handling
- Show memory as HEX
- Notepad
- REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN IT'S "FROZEN" STATE
- Show
- Disk Sync. pattern etc.
- Full search feature
- Unique Custom Chip Editor

REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN IT'S "FROZEN" STATE
WITH ALL MEMORY AND REGISTERS INTACT -
INVALUABLE FOR THE DE-BUGGER OR JUST THE INQUISEIVE

WARNING 1988 COPYRIGHT ACT WARNING
Ditel Electronics Ltd., neither condones nor authorises the use of its products for the reproduction of copyright material.
The backup facilities of this product are designed to reproduce only software such as Public Domain material, the user's own programs or software where permission to make backups has been clearly given.
It is illegal to make copies, even for your own use, of copyright material, without the express permission of the copyright owner, or the licensee thereof.

HOW TO GET YOUR ORDER **FAST...**
TELEPHONE (24 Hrs) - 0782 744707 - CREDIT CARD ORDERS

WE WILL DESPATCH YOUR ORDER QUICKLY & EFFICIENTLY TO ENABLE YOU TO START RECEIVING THE BENEFITS OF YOUR PURCHASE WITHIN DAYS, NOT WEEKS.

ORDERS NORMALLY DESPATCHED WITHIN 48 Hrs. ALL PRICES INCLUDE V.A.T. ALL CHEQUES/POSTAL ORDERS MADE PAYABLE TO...

DTEL ELECTRONICS LTD.,

GOVAN ROAD, FENTON INDUSTRIAL ESTATE, FENTON, STOKE-ON-TRENT, ST4 2RS, ENGLAND
TECHNICAL/CUSTOMER SERVICE 0782 744324



GO NINJA!



No ugly wart-nose is gonna make a monkey out of me! But that's just what that witch has done - one minute I'm the mighty Toki and the next I'm having breakfast delousing my armpits, I can't walk a step without tripping over my knuckles and, oh, there's an overhanging vine - time to swing out sister! But my broken heart is going ape. My beloved Miho (I can't wait to share a banana with her) has been kidnapped and somehow I've got to regain my manhood - until then I'm just swingin' in the rain!

The arcade sensation by Fabtek Inc. is now available for your micro.

OCEAN

OCEAN SOFTWARE LTD, 6 CENTRAL
STREET, MANCHESTER M2 5NS.
TEL: 061-832 6633, FAX 061-834 0650

SPECTRUM . AMSTRAD CARTRIDGE
COMMODORE CARTRIDGE
ATARI ST . AMIGA

ARE YOU A
£20,000
WINNER?

Find out
on page
58

COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

THIS WEEK

AMIGA

Drastic price cuts in the US - will the UK follow?

ATARI

Those new ST Book and Pad specifications in full

FORGED GAMES

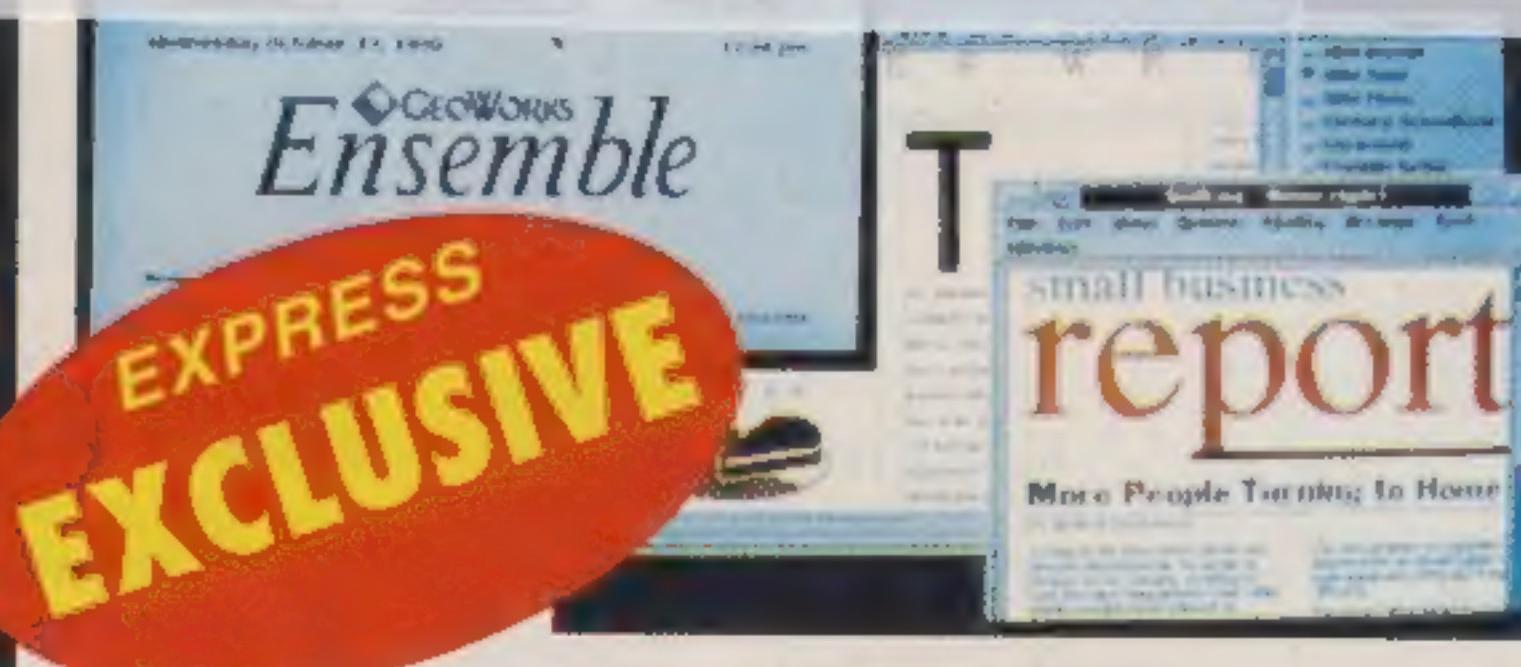
**EXPRESS
SPECIAL
REPORT**

FREE! ESSENTIAL Atari ST Supplement

Absolutely all you
need to know about
the Atari ST range...

- Your guide to ST add-ons
- Games you've GOT to have
- The software you need and how to use it
- All the latest products
- Atari's future plans

REGULAR
COLUMNS ON
PROGRAMMING
PD SOFTWARE
TECH TIPS
ELECTRONICS
& 36 PAGES OF
**SHOPPING
EXPRESS**
BARGAINS !!!

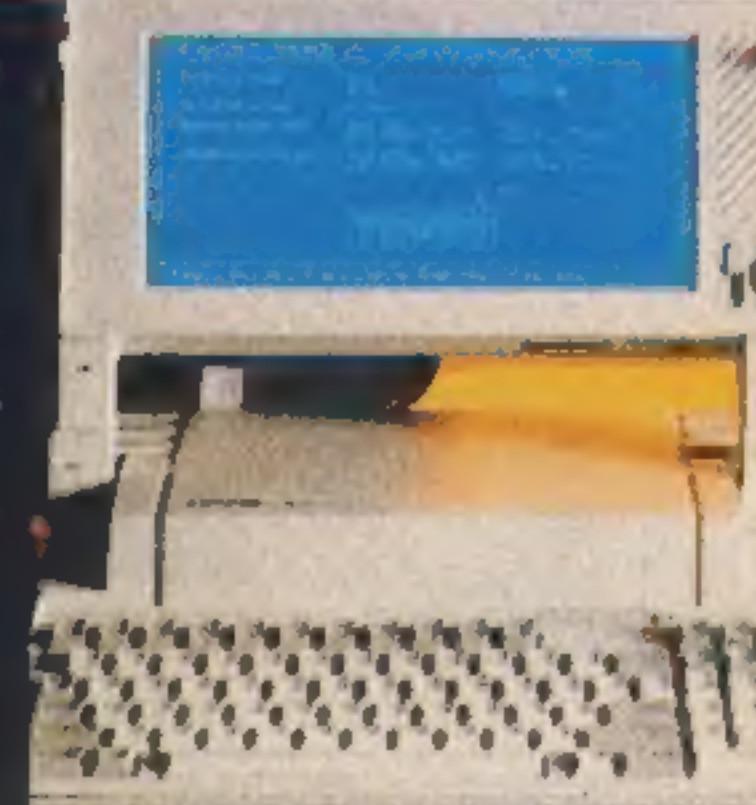


ENSEMBLE:

Is this the new contender
for the Windows throne?

POWER PRICING

The £500
hard
disk
laptop!



Future
PUBLISHING
Your guarantee of value

